PB90-191784

Analysis of Acid Precipitation Samples Collected by State Agencies: January-December 1988

Global Geochemistry Corp., Canoga Park, CA

Prepared for:

Environmental Protection Agency, Research Triangle Park, NC

Mar 90

U.S. Department of Commerce
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ANNUAL REPORT

Analysis of Acid Precipitation Samples Collected by State Agencies Sampling Period: Jan 1988 – Dec 1988

by

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ABSTRACT

This report presents analytical data from the 30 acid precipitation collection sites in the State-Operated Network. Samples are collected weekly in plastic bag liners and shipped in 500 mL polyethylene bottles to Global Geochemistry Corporation (the central laboratory for the network). This report contains maps showing the location of each site, plots of analytical data, tables of all field and analytical data, plots comparing field and laboratory pH and conductivity, and information on data quality.

Samples are analyzed for pH, strong acid, conductivity, fluoride, chloride, nitrite, phosphate, bromide, nitrate, sulfate, ammonium, sodium, potassium, calcium, and magnesium.

The central laboratory renders technical assistance to the collection sites on problems concerning pH and conductivity. Each of the 11 participating state agencies receives analytical reports for the samples analyzed the previous month. Analyte concentration data are sent to the Acid Deposition System (ADS) for inclusion in the National Acid Precipitation Data Base.

1.0 INTRODUCTION

As the central laboratory for the State-Operated Network, Global Geochemistry Corporation (GGC) analyzes acid precipitation samples for pH, strong acid, conductivity, fluoride, chloride, nitrite, phosphate, bromide, nitrate, sulfate, ammonium, sodium, potassium, calcium, and magnesium.

The central laboratory provides the collection sites with plastic bucket liners, 500 mL sample bottles, field data sheets, pH and conductivity solutions, and other supplies incidental to collecting and shipping a collected rain sample. The central laboratory also provides technical assistance whenever it is requested by the field sites. This assistance has consisted mostly of advice on field pH and conductivity measurement procedures and equipment.

This report contains maps showing the location of each site, plots of analytical data during the time period, tables of all field and analytical data, a comparison of analyte concentrations at all sites (frequency of occurrence), precipitation weighted data for each site, plots comparing field and laboratory pH and conductivity, and quality control tables and plots.

Each participating state agency receives a monthly report of analytical data.

Data are summarized on magnetic tape for inclusion in the yearly report of the national acid rain data base, and Acid Deposition System (ADS), funded by EPA.

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NETWORK INFORMATION

There were 30 operational sites in the EPA state network during 1988. LAHOM was the only site added in 1988. Figure 1.0-1 is a map of the United States which indicates the location of each sampling site. Information on each site is presented in Table 1.0-1.

The sites in this network all do weekly precipitation collection using a wet/dry bucket collector. Early on in the contract (1983) a few dry samples were analyzed as well as the wet samples, but after a month or so of operation, only wet samples were analyzed. All samples except those of the MDHUR site were shipped unrefrigerated to the laboratory. Prior to AUG 84, samples were shipped in the collection buckets themselves. Since AUG 84, samples have been shipped in sealed 500 ml bottles.

ANALYTICAL METHODS

The laboratory analytical methods used in this contract are presented below:

DESCRIPTION	METHOD	ANALYTICAL TYPE
pH	EPA Method 150.1	pH
Conductivity	EPA Method 120.1	Conductivity
Acidity	Global Geochemistry	Gran Titration
Cl, PO4, NO3, SO4	Ion Chromatography	Dionex
NH4	EPA Method 350.1	Colorimetric
Na, K, Ca, Mg	EPA AA Methods 273.1, 258.1, 215.1, 242.1	Atomic Absorption for Ca, Mg Flame Emission for Na, K.

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Figure 1.0-1
EPA State Operated Rain Network

TABLE 1.0-1

EPA STATE ACID PRECIPITATION NETWORK SITE INFORMATION

SITE	SITE NAME SITE#	NEAREST CITY	COUNTY	STATE CONTACT (TEL#)	LATITUDE LONGITUDE	ELEVATION(FT)
ALMOB	Mobile 0101	Mobile	Mobile	Wm. Gerald Hardy (205-271-7861)	30°40'07" 88°13'13"	25
ALTAL	Tallassee 0102	Tallassee	Elmore	"	32°34'03" 85°55'54"	502
DEGEO	Georgetown 0801	Georgetown	Sussex	Joe Kliment (302-323-4569)	38°37' 75°27'	15
DELUM	Lum's Pond 0802	Newark	New Castle	"	39°34' 75°43.5'	65
GABFG	B.F. Grant Forest 1103	Eatonton	Putnam	Chris Redmond (404-656-5936)	33°24'53" 83°31'15"	564
GADAW	Dawsonville 1104	Gainesville	Dawson	"	34°20'00" 83°50'00"	1075
GADUF	McDuffie Country 1105	Augusta	McDuffie	"	33°53'24" 85°40'34"	433
GAHIW	Hiawassee 1101	Hiawassee	Towns	"	33°53'24" 83°40'34"	2146
GASUM	Summerville 1102	Summerville	Chattooga	"	34°28'21" 85°24'27"	633
GAWAY	Waycross Forest 1106	Waycross	Ware	"	31°15'00" 82°22'00"	135
KYGRA	Grayson Lake 1801	Grayson	Carter	Jerry Suddeth (502-564-3382)	38°14'00" 82°59'00"	603
KYMAM	Mammoth Cave 1802	Brownsville	Edmonson	"	37°13'00" 86°04'00"	720
LACAR	Carville 1903	Carville	Iberville	Karen Geesey (504-295-8900)	30°14'27" 91°9'33"	25
LACHS	Chase 1902	Chase	Franklin	"	32°05'13" 91°44'31"	70
LAHOM	Homer 1904	Homer	Claiborne	Sam Feagley (504-388-1347)	32°45' 93°03'	262
LAROS	Rosepine 1901	Rosepine	Vernon	Karen Geesey (504-295-8900)	30°55'21" 93°19'22"	220
*MDHUR(1)	Hurlock	Hurlock	Dorchester	Joseph Bachman (301-828-1535)	-	-
MDRGP	Rocky Gap 2102	Cumberland	Allegany	Richard A. Wies (301-631-3280)	39°43'12" 78°38'03"	1240
MD3EC	The Elms 2103	Lexington Pk	St. Marys	"	38°12'03" 76°22'30"	5
MSUNI	University 2501	University	Lafayette	Randy Byars (601-232-5971)	34°23'00" 89°32'00"	381
SCCAP	Cape Romain 4201	Mt Pleasant	Charleston	Gene Slice (803-737-7020)	32°56'32" 78°39'27"	16
SCCON	Congaree Swamp 4202	Hopkins	Richland	"	33°48'58" 80°49'38"	105

TABLE 1.0-1 (CONTINUED)

EPA STATE ACID PRECIPITATION NETWORK SITE INFORMATION

SITE	SITE NAME SITE#	NEAREST CITY	COUNTY	STATE CONTACT (TEL#)	LATITUDE LONGITUDE	ELEVATION(FT)
SCDEL	Delta 4203	Whitmire	Union	"	34°32'21" 81°33'40"	371
SCLON	Lng Crk Fire Twr 4204	Walhalla	Oconee	"	34°48'19" 83°14'17"	1975
*SDBGP(2)	Buffalo Gap 4301	Hot Springs	Custer	Neva Welch (605-773-3153)	43°33' 103°25'	3360
SDAPR(3)	Pierre 4302	Pierre	Hughes	"	44°20'38" 100°14'42"	1425
SDBPR(4)	Pierre Colocated 4303	Pierre	Hughes	"	44°20'38" 100°14'42"	1425
SDCUS(5)	Custer State park 4304	Hermosa	Custer	"	43°43'47" 103°21'14"	3980
TNCEN	Center Hill Res 4401	Smithville	DeKalb	E.R. Brawner Jr. (615-741-3931)	36°02'20" 85°43'59"	1005
WVAPC(6)	Charleston APC 5001	Charleston	Kanawha	Ronald Engle (304-348-2275)	38°20'31" 81°37'11"	605
WVGRN(7)	Greenbrier 5002	Lewisburg	Greenbrier	"	37°48'39" 80°30'46"	2720
WVNEW(8)	New Manchester 5003	New Cumberland	Hancock	"	40°31'42" 80°34'32"	1170
*WVWAR(9)	Warwood Ave. 5004	Wheeling	Ohio	"	40°07'14" 80°41'59"	695

* Sites not operational in 1988

1) MDHUR - sampling 27MAR84 - 1AUG84
2) SDBGP - sampling 25NOV86 - 20JAN87
9) WVWAR - sampling 2JAN85 - 4MAR87

Sites shut down in 1988

3) SDAPR - sampling 11NOV86 - 29MAR88
4) SDBPR - sampling 4NOV86 - 29MAR88
5) SDCUS - sampling 3SEP87 - 9AUG88

Sites temporatily shut down

6) WVAPC - down - 3FEB87 - 19JAN88
7) WVGRN - down - 20JAN87 - 28JAN88
8) WVNEW - down - 4MAR87 - 26JAN88

New sites added in 1988

LAHOM - sampling started 28JUN88

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FIELD SITE ANALYTICAL SURVEYS

GGC conducts a survey of field site proficiency in pH and conductivity analyses once per 6 months and a survey of gravimetric analysis proficiency once per year. For the pH and conductivity audits, one each of a pH and a conductivity audit solution are sent to each site. For the weight audits one large weight of approximately 200 grams and one small weight of approximately 25 grams are sent to each site. The expected value for the pH and conductivity solutions are determined prior to shipment and each weight is calibrated against NBS Class S weights prior to shipment.

The survey results for 1988 are:

Table 1.0-2	pH, conductivity, weight	March 1988
Table 1.0-3	pH, conductivity	September 1988

The March 1988 survey results were reported in the 1987 annual report, and are repeated here for completeness.

Table 1.0-2

EPA State Operated Network
Survey pH, Cond, Weight: March 1988

	PH		COND		WEIGHTS				
Expected:	4.28		37.4			LARGE		SMALL	
SITE	FOUND	DIF EXP	FOUND umho/cm	DIF EXP umho/cm	WT ID	FOUND wt	DIF EXP wt	FOUND wt	DIF EXP wt
ALTAL	4.27	-0.01	39.1	1.7	X	204.5	-0.8	26.0	0.1
ALMOB	4.28	0.00	36.1	-1.3	Y	182.0	-16.3	26.0	-0.2
DEGEO	4.18	-0.10	38.0	0.6	AA	196.3	-0.7	24.6	-0.1
DELUM	4.18	-0.10	38.0	0.6	AA	196.3	-0.7	24.6	-0.1
GAHIW	4.26	-0.02	34.9	-2.5	A	200.0	0.6	27.3	0.9
GADAW	4.28	0.00	39.5	2.1	AB	202.0	1.9	28.5	2.0
GABFG	4.25	-0.03	35.7	-1.7	AD	201.0	-0.7	25.0	-0.1
GASUM	4.27	-0.01	33.2	-4.2	B	200.0	-0.4	26.5	0.3
KYMAM	4.24	-0.04	38.5	1.1	D	192.0	-3.5	29.0	2.6
KYGRA	4.27	-0.01	38.8	1.4	E	199.0	-0.8	26.0	0.1
LACHS	4.13	-0.15	39.2	1.8	F	196.0	-1.4	26.0	-0.3
LAROS	4.26	-0.02	37.4	0.0	H	197.4	-1.2	25.1	-1.6
LACAR	4.15	-0.13	43.5	6.1	G	198.0	-1.1	25.0	-1.2
MD3EC	4.46	0.18	32.8	-4.6	I	198.0	0.2	26.0	0.1
MDRGP	4.22	-0.06	37.1	-0.3	J	202.0	-0.3	26.0	-0.2
MSUNI	4.24	-0.04	34.5	-2.9	K	203.0	-0.7	26.0	-0.3
SCCAP	4.19	-0.09	38.4	1.0	O	197.5	-1.5	26.0	-0.4
SCCON	4.19	-0.09	38.5	1.1	N	200.0	-0.8	26.0	-0.1
SCDEL	4.19	-0.09	38.5	1.1	M	197.0	0.0	26.0	0.1
SCLON	4.18	-0.10	38.5	1.1	L	196.0	-2.1	25.0	-1.0
TNCEN	4.26	-0.02	40.0	2.6	P	198.0	-0.8	26.0	-0.4
WVAPC	4.26	-0.02	37.0	-0.4	R	199.3	-1.0	25.9	-0.0
WVNEW	4.19	-0.09	38.4	1.0	Q	199.4	-0.7	26.3	-0.0
WVGRN	4.27	-0.01	37.1	-0.3	AF	201.4	-1.1	25.1	-0.0
Average	4.24	-0.04	37.6	0.2			-1.4		0.0
Std. Dev.	0.06	0.06	2.2	2.2			3.2		0.8
Expected	4.28		37.4						

PHCOND

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Table 1.0-3

EPA State Operated Rain Network
Survey: pH, Conductivity, September 1988

Site	Analyst	Date	pH Found	pH Dif Exp	Conductivity Found	Conductivity Dif Exp	Note
		Expected	4.23		38.14		
ALMOB	C. Townsend	04 OCT 88	4.60	0.37	38.3	0.16	
ALTAL	C. Stallworth	07 OCT 88	4.29	0.06	39.2	1.06	
DEGEO							1
DELUM							1
GABFG	T. Ramsey	12 OCT 88	4.39	0.16	40.4	2.26	
GADAW	West, Talley	06 OCT 88	4.23		40.3	2.16	
GADUF							2
GAHIW		01 NOV 88					3
GASUM	L. Koenig	01 NOV 88	4.34	0.11	30.4	-7.74	
GAWAY	Wynn	18 OCT 88	4.26	0.03	41.5	3.36	
KYGRA							4
KYMAM	K.B. Taylor	25 OCT 88	4.18	-0.05	36.5	-1.64	
LACAR	M. Hebert	18 OCT 88	4.05	-0.18	49.3	11.16	
LACHS	L.C. Ingles	25 OCT 88	4.24	0.01	36.4	-1.74	
LAHOM	Sheri Simeon	01 NOV 88	4.65	0.42	35.0	-3.14	
LAROS	K. Johnson	15 NOV 88	4.23		37.0	-1.14	
MD3EC	J. Duncan	06 OCT 88	4.34	0.11	38.2	0.06	
MDRGP	M. Risoldi	06 OCT 88	4.27	0.04	37.4	-0.74	
MSUNI	Stanley Watkins	01 NOV 88	4.25	0.02	35.2	-2.94	
SCCAP	W. Smyth	06 OCT 88	4.22	-0.01	38.5	0.36	
SCCON	W. Smyth	06 OCT 88	4.21	-0.02	38.5	0.36	
SCDEL	W. Smyth	06 OCT 88	4.21	-0.02	38.6	0.46	
SCLON	W. Smyth	06 OCT 88	4.21	-0.02	38.5	0.36	
TNCEN	LKS	05 OCT 88	4.25	0.02	37.8	-0.34	
WVAPC	Ruth Porter	28 OCT 88	4.27	0.04	36.0	-2.14	
WVGRN	Ruth Porter	28 OCT 88	4.26	0.03	36.1	-2.04	
WVNEW	J.C. Psaroudis	24 OCT 88	3.90	-0.33	39.2	1.06	
		Average	4.26	0.07	38.1	1.04	
		Std. Dev.	0.15	0.12	3.4	2.40	

1) Data were sent by site personnel but were not received by GGC.
2) Data were not received by GGC.
3) Equipment was not operational.
4) Site was not able to participate in the survey.

2.0 REPORTS OF DATA BY STATE AND SITE

The data for each state and each site within the state are presented in this section for the time period JAN 88 through DEC 88. Included is a map of each state giving the location of each site, a table of site information, a plot of selected analytical data for each site, and a table of all data for each site.

The points appearing on the limit lines at the top of the plots should be interpreted as being equal to or greater than the limit value.

The plots of data include a plot for each laboratory analyte except for the analytes GRAN (strong acidity), NO2, PO4, and BR. These were excluded for the following reasons: 1) lack of space; 2) pH data are plotted and plots of GRAN data would be redundant; 3) NO2, PO4, and Br are at or below the detection limit in most cases and plots would yield little information beyond that fact (see Appendix A for detection limit information).

Data are plotted for all samples except for those which have the following values under the "CODE2" mnemonic: "99" - this is a sample voided by GGC because of visually obvious contamination; "31" - a sample which the field operator indicated as having bird droppings; "32" - a sample which the field operator indicated as being cloudy or colored. "34" - a sample which the field operator indicated as having insects; "90" - a dry side bucket.

Explanations of some of the headers in the data tables are given in Table 2-1. Multiplication factors to convert mg/l to μequiv/l are given in Table 2-2.

Negative data in the data tables indicate an instrumental response below the detection limit. The number after the minus sign is the approximate detection limit.

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TABLE 2-1

Explanations of Date Table Headings

GGC ID	Sequential identification number assigned by GGC during sample check-in.
Site Code	5 character code - the 1st two characters are the state code; the last 3 characters are the first three characters of the site name
Type	AB.NN (A - 'blank'=Wet, 1=Bulk, 2=Undefined) (B - 'blank'=Rain, 1=Snow, 2=Mixture, 3=Unknown, 4=Dew) (NN - Sensor temp in degrees centigrade)
Comment Code 1	One digit: 1 - insect in bucket, 2 - vegetation in bucket, 3 - Dirt/particulates in bucket, 4 - decaying matter in bucket, 9 - field data sheet wet and illegible. All of the single digit codes are assigned by GGC based on a visual inspection of the sample (or data sheet).
Comment Code 2	Two digit: 10 - no sample received, bucket empty; Operator codes: 21 - sampler malfunction; 31 - bird droppings; 32 - cloudy or discolored; 33 - dirt or soot; 34 - insects; 90 - dry side bucket. 99 - sample voided by GGC due to GGC CODE1 of 1, 3, or 4. No laboratory analyses performed (other than weighing in of sample and pH measurement). Codes 21, 31-34, and 90 are assigned based on information on the field data sheet. The other 2 digit codes are assigned by GGC based on a visual inspection of the sample.
Anion/Cation	Molar anion over cation ratio
TC/MC	Ratio of the theoretical conductivity to the measured conductivity
WT	Volume of sample received by the laboratory
PH	pH measured in the laboratory

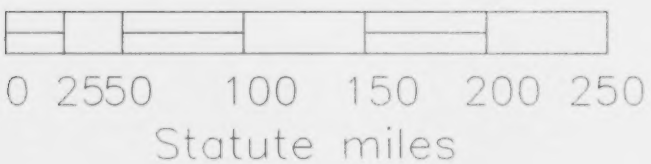
TABLE 2-1 (continued)
Explanations of Data Table Headings

GRAN	Amount of strong acid measured by the GRAN titration
COND	Conductivity measured in the laboratory
F, Cl, NO2, PO4, Br, NO3, SO4, NH4, Na, K, Ca, Mg	Laboratory analytical data

TABLE 2-2
Multiplication Factors, mg/l to μequiv/l

F	52.6
Cl	28.2
NO_2	21.7
PO4 ($H_2PO_4^-$)	10.3
Br	12.5
NO_3	16.1
SO_4	20.8
NH_4	55.4
Na	43.5
K	25.6
Ca	49.9
Mg	82.3

Alabama



□ Major city (for reference)

* EPA Acid Rain Site

ALABAMA

SITE	SITE NAME	NEAREST CITY	COUNTY	SAMPLING PERIOD(1) BEGIN	END	#SAMPLES	%NON-VOID(2)
ALMOB	Mobile	Mobile	Mobile			38	100.0
ALTAL	Tallassee	Tallassee	Elmore			39	100.0

(1) "BEGIN" was JAN 88 and "END" was DEC 88 unless otherwise noted. For sites which were not operational during 1988, the date range of operation is given.

(2) Percentage of samples received which were not voided by GGC due to contamination.

Figure 2-1
Site: ALMOB
Data Plots, Jan 1988 - Dec 1988

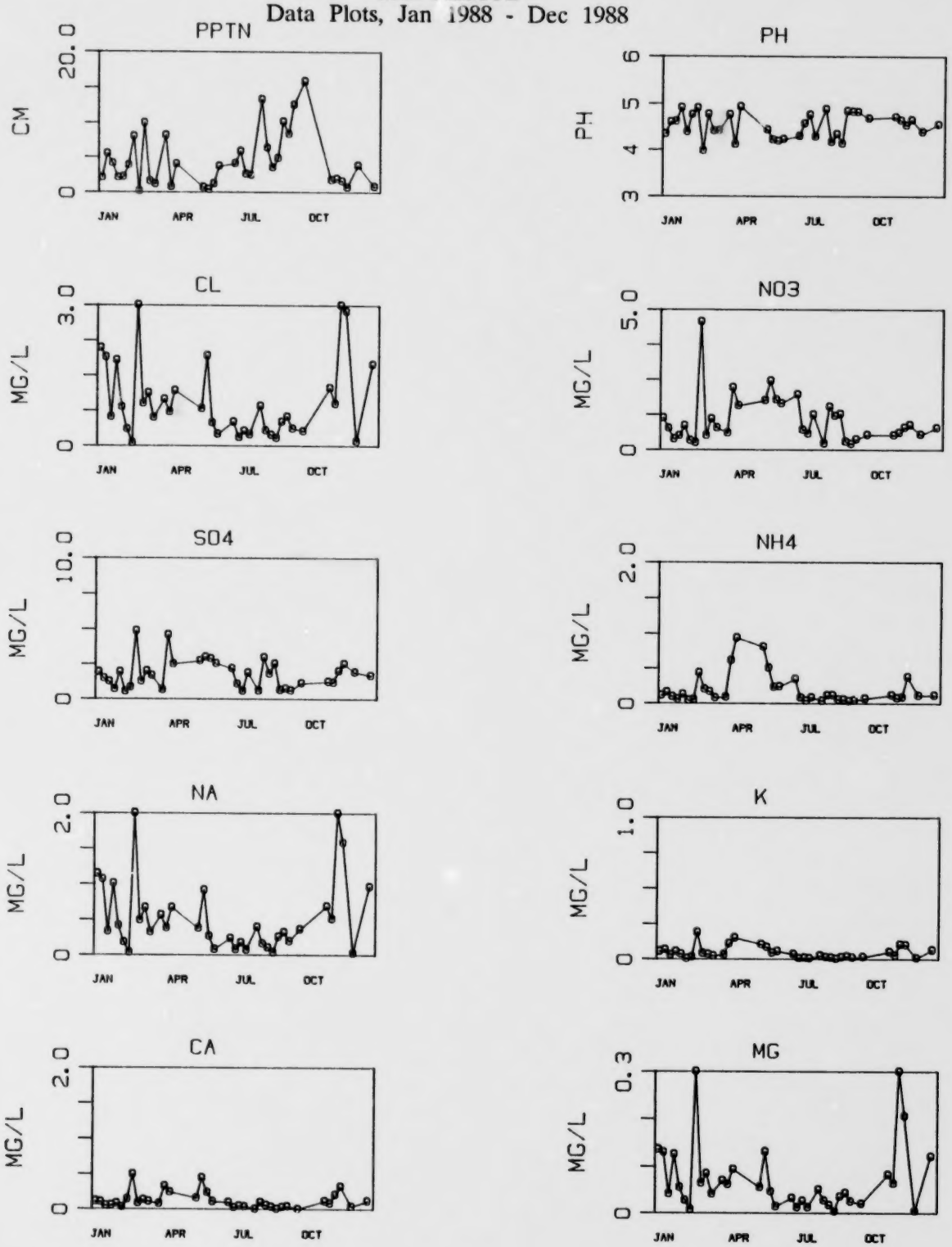
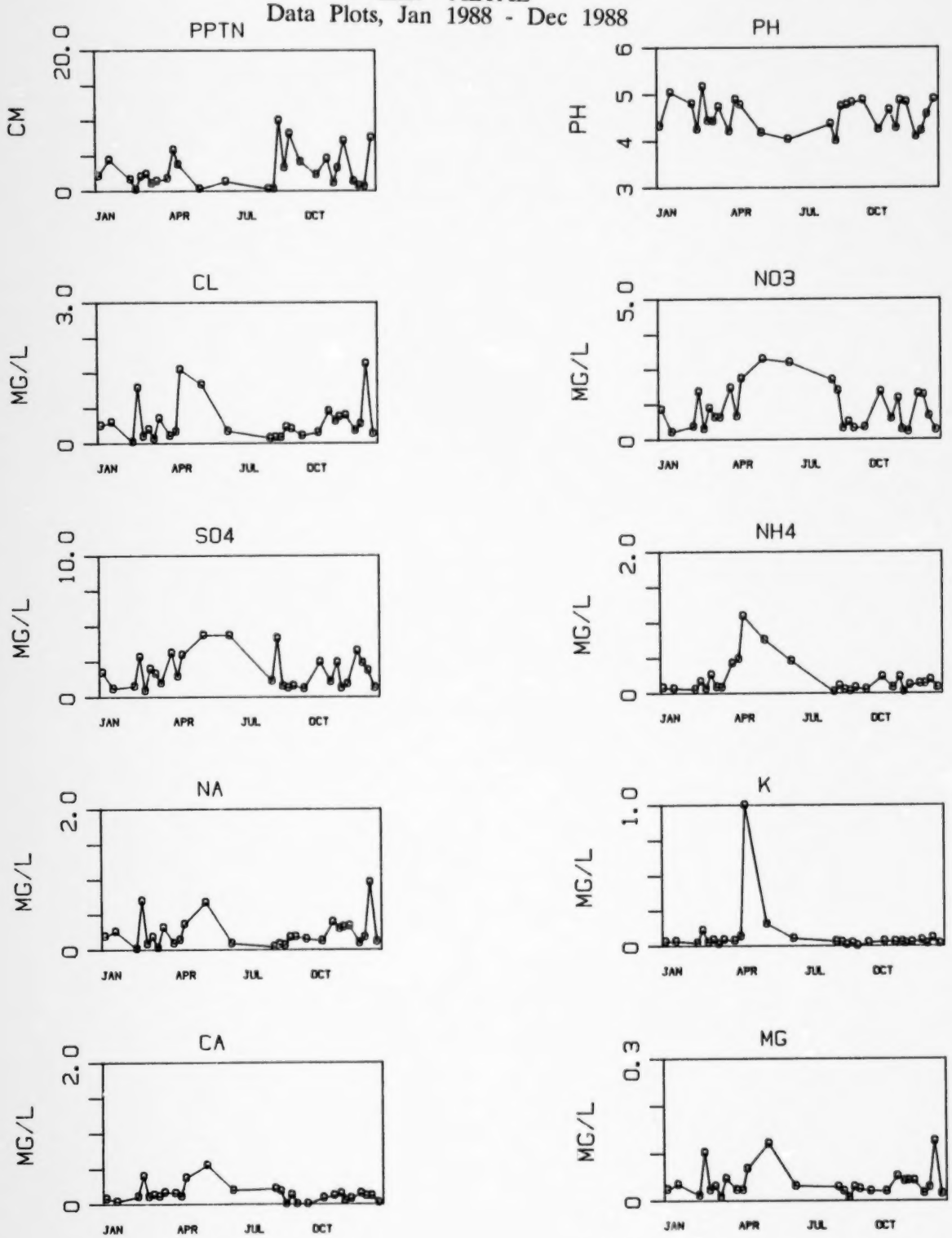


Figure 2-1 (continued)
Site: ALTAL
Data Plots, Jan 1988 - Dec 1988



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EPA State Operated Rain Network
1988 Sampling and Field Data

GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3507	ALMOB	880105	920	880112	920	880121		1	0.80	1120.0	26.8	4.50	3	
3517	ALMOB	880112	920	880119	930	880125		4	2.15	3606.0	21.0	4.60		33
3547	ALMOB	880119	945	880126	915	880202		2	1.60	2632.0	13.2	4.70		
3579	ALMOB	880126	915	880202	900	880210		2	0.80	1440.0	12.6	4.80		
3587	ALMOB	880202	900	880209	850	880212	2.00	4	0.84	1468.0	21.5	4.40		
3616	ALMOB	880209	830	880216	1230	880223		2	1.50	2747.0	7.6	4.88		
3635	ALMOB	880216	1230	880223	915	880229		4	3.15	4993.0	7.0	4.91		
3657	ALMOB	880223	915	880301	905	880307		1	0.05	116.0	58.1	4.05		
3668	ALMOB	880301	905	880308	935	880315		2	3.92	6556.0	17.2	4.78		
3683	ALMOB	880308	935	880315	925	880321		2	0.60	1064.0	22.2	4.42		
3705	ALMOB	880315	925	880322	912	880325		1	0.45	740.0	24.7	5.00		
3736	ALMOB	880322	912	880329	930	880406		2	3.00	4974.0	11.3	5.03		34
3756	ALMOB	880329	930	880405	930	880414		4	3.20	5284.0	17.8	5.00		
3775	ALMOB	880405	930	880412	910	880421		2	0.30	344.0	46.3	4.17	3	
3806	ALMOB	880412	910	880419	906	880428		1	1.57	2695.0	30.1	4.49	3	
3882	ALMOB	880517	900	880524	851	880527		2		462.0	26.3	4.42		
3918	ALMOB	880524	851	880531	915	880608		1	0.15	266.0			3	
3926	ALMOB	880531	920	880607	900	880610		2	0.47	823.0	29.9	4.33		
3937	ALMOB	880607	900	880614	917	880618		2	1.45	2232.0	22.9	4.40	3	
3985	ALMOB	880628	912	880705	903	880711		3	1.60	2789.0	18.3	4.40	3	
4007	ALMOB	880705	904	880712	900	880719				3962.0	21.0	4.56		
4018	ALMOB	880712	902	880719	920	880725		2	1.00	1701.0	9.6	5.05		
4037	ALMOB	880719	920	880726	907	880729		2	0.95	1604.0	18.8	4.35	3	
4091	ALMOB	880802	910	880809	920	880812		5	5.25	10940	7.2	5.17	3	
4123	ALMOB	880809	930	880816	930	880824		4	2.50	4461.0	27.4	4.21	3	
4147	ALMOB	880816	930	880823	900	880830		3	1.37	2405.5	17.9	4.43	3	
4201	ALMOB	880823	900	880830	925	880907		1	1.90	3178.5	24.6	4.27	3	
4166	ALMOB	880830	925	880906	915	880915		5	4.00	6530.0	56.1	5.34	3	
4216	ALMOB	880906	915	880913	915	880922		3	3.27	5205.5	6.3	5.24		
4192	ALMOB	880913	915	880920	950	880923		3	4.95	8127.5	5.6	5.14		

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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3507	ALMOB	880105	0.99	1.10	550.0	4.34	46.6	26.0	-0.002	2.084	-0.086	0.018	-0.154	1.117	1.913	0.109	1.138	0.055	0.110	0.136
3517	ALMOB	880112	1.00	1.12	550.0	4.60	29.1	17.8	-0.002	1.890	-0.008	0.022	-0.031	0.750	1.448	0.153	1.060	0.064	0.097	0.129
3547	ALMOB	880119	0.99	1.17	550.0	4.61	25.9	11.7	-0.003	0.610	-0.005	0.029	-0.042	0.369	1.223	0.091	0.328	0.028	0.045	0.041
3579	ALMOB	880126	1.01	1.06	550.0	4.91	15.4	12.3	-0.002	1.824	-0.022	-0.008	-0.009	0.488	0.684	0.056	1.002	0.052	0.052	0.126
3587	ALMOB	880202	1.03	1.07	550.0	4.38	45.0	20.7	0.010	0.821	-0.017	-0.007	-0.008	0.843	1.922	0.124	0.411	0.034	0.078	0.055
3616	ALMOB	880209	0.90	1.38	550.0	4.76	21.4	6.4	0.006	0.351	-0.017	0.038	-0.160	0.319	0.520	0.040	0.178	0.002	0.023	0.027
3635	ALMOB	880216	0.98	1.25	550.0	4.90	15.9	5.5	-0.005	0.055	-0.010	0.044	-0.110	0.249	0.820	0.051	0.029	0.015	0.137	0.008
3657	ALMOB	880223	1.02	1.01	80.0	3.97	108.1	68.7	0.041	4.060	-0.008	0.049	-0.007	4.560	4.861	0.434	2.330	0.188	0.494	0.308
3668	ALMOB	880301	1.02	1.12	550.0	4.77	21.7	11.5	0.005	0.897	-0.004	0.022	-0.012	0.500	1.257	0.199	0.487	0.039	0.081	0.064
3683	ALMOB	880308	1.01	1.11	550.0	4.40	43.8	21.5	0.014	1.125	-0.006	0.030	-0.006	1.087	1.994	0.164	0.663	0.033	0.128	0.085
3705	ALMOB	880315	0.97	1.15	550.0	4.41	40.5	17.4	0.010	0.598	-0.021	-0.015	-0.020	0.768	1.668	0.078	0.322	0.022	0.108	0.041
3736	ALMOB	880322	0.97	1.28	550.0	4.94	13.3	6.4	-0.008	0.439	-0.015	0.060	-0.015	0.398	0.723	0.120	0.252	0.024	0.088	0.034
3756	ALMOB	880329	0.92	1.27	550.0	4.76	20.6	9.6	0.004	0.993	-0.009	0.037	-0.012	0.586	0.644	0.088	0.560	0.032	0.076	0.070
3775	ALMOB	880405	1.01	1.08	210.0	4.11	79.3	40.2	0.021	0.719	-0.006	0.024	-0.009	2.210	4.579	0.611	0.379	0.110	0.326	0.061
3806	ALMOB	880412	0.97	1.01	550.0	4.93	17.8	19.2	0.015	1.175	-0.012	0.042	-0.005	1.561	2.501	0.937	0.664	0.150	0.239	0.094
3882	ALMOB	880517	0.97	1.04	150.0	4.43	44.6	25.2	0.023	0.791	-0.006	0.027	-0.007	1.755	2.743	0.808	0.374	0.104	0.155	0.055
3918	ALMOB	880524	0.96	1.06	250.0	4.21	65.4	37.0	0.025	1.923	-0.003	-0.040	-0.014	2.447	3.003	0.504	0.910	0.085	0.445	0.131
3926	ALMOB	880531	0.98	1.09	550.0	4.18	68.6	30.5	0.025	0.486	-0.001	-0.030	-0.009	1.778	2.886	0.230	0.263	0.044	0.235	0.046
3937	ALMOB	880607	1.05	1.05	550.0	4.22	66.9	27.9	0.023	0.245	-0.004	0.027	-0.015	1.639	2.530	0.238	0.080	0.054	0.105	0.014
3985	ALMOB	880628	1.05	1.05	550.0	4.29	57.1	25.9	0.019	0.506	-0.003	0.025	-0.006	1.960	2.179	0.346	0.235	0.034	0.094	0.032
4007	ALMOB	880705	1.09	1.15	550.0	4.57	33.6	11.3	0.007	0.179	-0.008	0.026	-0.011	0.705	1.063	0.079	0.077	0.006	0.021	0.013
4018	ALMOB	880712	0.99	1.17	550.0	4.76	23.4	7.8	0.006	0.315	-0.007	0.027	-0.017	0.561	0.578	0.036	0.174	0.010	0.044	0.026
4037	ALMOB	880719	1.06	1.09	550.0	4.28	63.2	21.8	0.008	0.237	-0.005	-0.064	-0.024	1.241	1.881	0.081	0.072	0.005	0.034	0.013
4091	ALMOB	880802	1.07	1.10	550.0	4.88	16.7	8.0	-0.002	0.848	-0.003	-0.020	-0.043	0.219	0.584	0.033	0.395	0.024	-0.032	0.050
4123	ALMOB	880809	1.09	1.02	550.0	4.16	76.5	31.9	-0.020	0.321	-0.005	0.030	-0.026	1.522	2.987	0.113	0.161	0.013	0.095	0.027
4147	ALMOB	880816	1.06	1.06	550.0	4.34	50.9	20.4	0.009	0.232	-0.005	0.017	-0.024	1.200	1.814	0.114	0.106	0.010	0.058	0.017
4201	ALMOB	880823	1.00	1.11	525.0	4.13	75.3	28.9	0.011	0.166	-0.005	0.037	-0.023	1.268	2.540	0.053	0.034	0.002	0.031	0.003
4166	ALMOB	880830	1.02	1.24	550.0	4.84	18.4	6.8	0.002	0.509	-0.001	-0.052	-0.028	0.285	0.644	0.055	0.256	0.012	-0.013	0.035
4216	ALMOB	880906	1.02	1.23	550.0	4.83	17.0	7.3	-0.009	0.618	-0.010	-0.058	-0.039	0.208	0.741	0.029	0.320	0.019	0.027	0.043
4192	ALMOB	880913	1.03	1.29	550.0	4.82	20.7	6.5	0.004	0.365	-0.003	0.053	-0.018	0.364	0.612	0.041	0.194	0.010	0.039	0.025

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4255	ALMOB	880920	910	880927	910	881002				22.0				
4272	ALMOB	880927	910	881004	1025	881011		5	6.25	10382	8.0	5.08		
4355	ALMOB	881101	900	881108	900	881116		1	0.67	1131.5	15.8	4.70	3	33
4375	ALMOB	881108	900	881115	850	881117		1	0.75	1178.0	12.7	4.80	3	
4383	ALMOB	881115	850	881122	900	881117		2	0.61	932.0	29.4	4.30	3	33
4403	ALMOB	881122	900	881129	900	881202		1	0.28	485.0	27.3	4.60	3	
4456	ALMOB	881206	1300	881213	1300	890102		3	1.50	2362.0	18.6	4.30	3	
4467	ALMOB	881227	915	890103	850	890119		3	0.32	593.0	18.3	4.67		
3489	ALTAL	880105		880112	100	880120		2	0.85	975.0	23.4	4.51	3	
3584	ALTAL	880119	1300	880126	1000	880211	2.00	2	1.75	2753.1	7.2	5.25		
3588	ALTAL	880202	902	880209	845	880217		3	3.20	5345.3	9.2	5.00		32
3609	ALTAL	880209	851	880216	935	880222		1	0.44	768.2	21.6	4.43	3	3234
3649	ALTAL	880216	937	880223	931	880302		1	0.65	1065.2	9.1	4.89	3	
3662	ALTAL	880223	931	880301	900	880309		1	0.07	136.2	31.1	4.31		
3679	ALTAL	880301	905	880308	903	880317		1	0.80	1441.4	4.9	5.85		
3684	ALTAL	880308	904	880315	830	880321		3	0.95	1666.7	20.9	4.52	3	
3717	ALTAL	880315	843	880322	931	880329		1	0.43	738.8	18.2	4.52	3	
3746	ALTAL	880322	932	880329	900	880411		2	0.55	974.7	12.2	4.86	3	
3750	ALTAL	880329	902	880405	851	880412		2	0.25	563.6	24.6	4.56	3	32
3776	ALTAL	880405	852	880413	843	880421		3	0.70	1293.2	32.3	4.22	3	33
3801	ALTAL	880413	844	880419	910	880426		1	2.30	3773.5	16.1	5.25	3	
3819	ALTAL	880419	910	880426	910	880503		3	1.48	2563.3	27.9	4.80	3	33
3848	ALTAL	880503	920	880510	1235	880517		2	0.90	1536.2	28.1	4.43	3	34
3864	ALTAL	880510	1237	880517	903	880520		1	0.80	1464.3	26.9	4.37	3	3234
3883	ALTAL	880517	904	880524	1127	880531		1	0.11	201.4	45.9	4.16	3	
3969	ALTAL	880621	1030	880628	853	880705		2	0.52	899.2	62.0	3.94	3	
3992	ALTAL	880628	855	880705	939	880713		3	2.75	4645.3	40.2	4.64		34
4005	ALTAL	880705	943	880712	849	880718		2	0.69	1121.2	13.0	4.61	3	34
4019	ALTAL	880712	850	880719	820	880725		4	0.58	978.6	60.4	3.91	3	34

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									mg/l											
4255	ALMOB	880920	9999	9999																
4272	ALMOB	880927	1.18	1.22	550.0	4.68	20.8	10.0	0.005	0.309	-0.054	0.281	-0.015	0.521	1.126	0.068	0.360	0.014	-0.033	0.020
4355	ALMOB	881101	1.00	1.49	575.0	4.71	24.1	10.0	0.015	1.239	-0.016	-0.051	-0.052	0.511	1.239	0.116	0.686	0.052	0.116	0.083
4375	ALMOB	881108	1.02	1.15	575.0	4.64	25.5	12.7	0.011	0.895	-0.009	-0.043	-0.043	0.601	1.196	0.076	0.511	0.027	0.085	0.064
4383	ALMOB	881115	1.02	1.08	575.0	4.53	32.0	29.8	-0.006	4.522	-0.017	-0.068	-0.032	0.788	2.025	0.086	2.471	0.105	0.205	0.304
4403	ALMOB	881122	1.01	1.07	250.0	4.65	26.0	24.4	0.016	2.872	-0.017	-0.063	-0.038	0.880	2.532	0.376	1.584	0.101	0.321	0.206
4456	ALMOB	881206	1.05	1.11	575.0	4.39	45.4	17.0	0.014	0.099	-0.012	0.023	-0.035	0.536	1.935	0.113	0.027	0.009	0.040	0.005
4467	ALMOB	881227	1.04	1.12	360.0	4.55	28.1	18.5	0.009	1.741	-0.007	-0.014	-0.019	0.774	1.692	0.116	0.962	0.066	0.116	0.121
3489	ALTAL	880105	0.99	1.12	550.0	4.32	49.4	20.2	0.011	0.380	-0.007	0.013	0.113	1.075	1.732	0.082	0.192	0.032	0.081	0.025
3584	ALTAL	880119	0.99	1.14	500.0	5.04		5.7	-0.001	0.452	-0.019	-0.008	-0.008	0.268	0.581	0.065	0.257	0.033	0.041	0.034
3588	ALTAL	880202	1.10	1.29	550.0	4.75	21.7	7.0	0.009	0.341	-0.016	0.037	-0.063	0.252	0.744	-0.003	0.158	0.013	0.027	0.023
3609	ALTAL	880209	1.01	1.12	475.0	4.43	40.1	17.6	0.015	0.450	-0.018	0.036	-0.150	1.089	1.681	0.139	0.231	0.050	0.149	0.036
3649	ALTAL	880216	1.01	1.26	525.0	4.80	17.8	6.5	0.014	0.030	-0.005	0.054	-0.005	0.467	0.759	0.056	0.015	0.020	0.109	0.011
3662	ALTAL	880223	0.96	1.09	100.0	4.25	56.7	30.0	0.025	1.185	-0.003	0.021	-0.012	1.700	2.836	0.166	0.700	0.111	0.401	0.102
3679	ALTAL	880301	0.97	1.25	485.0	5.17	13.7	3.9	0.013	0.150	-0.007	0.026	-0.013	0.377	0.446	0.066	0.084	0.025	0.105	0.023
3684	ALTAL	880308	0.99	1.13	550.0	4.43	39.8	17.8	0.012	0.298	-0.006	0.032	-0.006	1.113	1.979	0.263	0.181	0.042	0.133	0.031
3717	ALTAL	880315	1.00	1.14	550.0	4.42	41.6	15.6	0.013	0.100	-0.027	-0.013	-0.020	0.792	1.641	0.090	0.024	0.013	0.113	0.008
3746	ALTAL	880322	0.98	1.12	450.0	4.73	18.6	10.6	0.016	0.532	-0.011	-0.043	-0.021	0.784	0.982	0.081	0.315	0.042	0.169	0.047
3750	ALTAL	880329	0.95	1.11	475.0	4.50	36.5	22.4	0.026	1.667	-0.013	-0.042	-0.024	1.949	1.764	0.149	1.016	0.112	0.504	0.139
3776	ALTAL	880405	1.01	1.11	550.0	4.21	63.0	28.5	0.017	0.166	-0.006	0.025	-0.009	1.833	3.115	0.428	0.093	0.037	0.159	0.023
3801	ALTAL	880413	0.95	1.10	550.0	4.89	19.3	10.3	0.011	0.252	-0.013	0.038	-0.005	0.826	1.461	0.486	0.140	0.067	0.115	0.023
3819	ALTAL	880419	0.79	1.08	490.0	4.78	25.6	26.0	0.021	1.571	-0.002	-0.037	-0.012	2.174	2.970	1.098	0.361	2.490	0.375	0.068
3848	ALTAL	880503	0.99	1.10	550.0	4.37	48.1	25.0	0.022	0.639	-0.006	0.040	-0.003	1.830	2.858	0.684	0.297	0.071	0.233	0.050
3864	ALTAL	880510	1.01	1.14	550.0	4.32	51.4	24.1	0.019	0.288	-0.005	0.047	-0.005	1.626	2.963	0.494	0.190	0.058	0.193	0.037
3883	ALTAL	880517	0.98	1.06	170.0	4.18	73.1	41.0	0.045	1.250	-0.002	0.032	-0.010	2.873	4.369	0.761	0.677	0.156	0.553	0.121
3969	ALTAL	880621	1.09	0.98	550.0	4.03	110.6	47.5	0.069	0.258	-0.009	0.061	-0.001	2.743	4.347	0.460	0.088	0.052	0.197	0.031
3992	ALTAL	880628	1.00	1.10	550.0	4.54	35.4	12.7	0.007	0.110	-0.009	0.016	-0.025	1.009	1.028	0.154	0.058	0.010	0.023	0.009
4005	ALTAL	880705	1.02	1.10	515.0	4.61	32.1	10.8	0.005	0.107	-0.008	0.013	-0.009	0.774	0.964	0.071	0.057	0.016	0.067	0.011
4019	ALTAL	880712	1.01	1.03	540.0	3.91	134.1	57.2	0.035	0.376	-0.007	-0.022	-0.017	2.805	5.511	0.411	0.229	0.029	0.208	0.050

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GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
4095	ALTAL	880803	828	880809	904	880815		1	0.28	447.1	19.4	5.91	13	3234
4124	ALTAL	880809	910	880816	830	880824		2	0.13	269.7	19.0	4.48	23	32
4148	ALTAL	880816	832	880823	835	880830		2	0.10	182.9	20.9	4.40	3	
4188	ALTAL	880823	837	880830	850	880908		1	0.10	184.4	46.1	4.06	3	21
4165	ALTAL	880830	850	880906	850	880915		4	3.95	6690.5	9.1	4.98		21
4217	ALTAL	880906	851	880913	957	880922		3	1.30	2266.9	9.2	4.79	3	
4243	ALTAL	880913	958	880920	915	880927		2	3.20	5325.9	9.2	4.76	3	
4300	ALTAL	880927	851	881004	858	881024		4	1.63	2503.8	8.1	4.88	3	21
4338	ALTAL	881018	920	881025	926	881109		3	0.90	1485.1	59.5	4.28		21
4324	ALTAL	881025	928	881101	910	881109		2	0.14	221.9		3.91	3	31
4354	ALTAL	881101	911	881110	903	881116		2	1.81	3067.2	17.4	5.05	3	
4398	ALTAL	881110	905	881115	901	881117		4	0.45	769.3	28.0	4.32	3	
4410	ALTAL	881115	905	881123	1310	881206		2	1.27	2271.6	8.5	5.14		21
4411	ALTAL	881123	1311	881129	855	881206		2	2.80	4879.6	11.9	4.76		21
4444	ALTAL	881206	835	881213	910	881219		2	0.53	912.2	36.3	4.12	3	21
4469	ALTAL	881213	912	881220	935	890119		1	0.28	517.3	30.8	4.28		21
4470	ALTAL	881220	939	881229	956	890119		2	0.25	336.9	21.2	4.63		21
4471	ALTAL	881229	957	890103	902	890117				5120.7	8.1	5.03		

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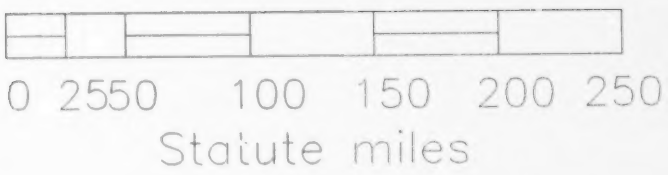
1988 Laboratory Data

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4095	ALTAL	880803	0.59	1.06	410.0	6.27		20.8	0.016	0.300	-0.003	0.838	-0.038	1.375	2.575	2.813	0.207	0.502	0.118	0.053
4124	ALTAL	880809	0.94	1.05	250.0	4.51	38.1	17.3	0.027	0.263	-0.005	0.031	-0.026	1.511	1.516	0.243	0.132	0.295	0.155	0.062
4148	ALTAL	880816	1.04	1.06	150.0	4.36	51.9	19.5	0.019	0.109	-0.005	0.026	-0.023	2.107	1.124	0.018	0.037	0.031	0.219	0.029
4188	ALTAL	880823	1.01	1.06	200.0	4.00	106.5	42.7	0.044	0.123	-0.002	0.030	-0.016	1.731	4.144	0.104	0.078	0.027	0.184	0.021
4165	ALTAL	880830	1.07	1.13	525.0	4.74	22.0	7.7	0.005	0.121	-0.001	-0.052	-0.027	0.393	0.776	0.052	0.064	0.008	-0.013	0.007
4217	ALTAL	880906	1.00	1.23	550.0	4.77	19.7	7.8	0.013	0.347	-0.020	0.052	-0.019	0.615	0.647	0.030	0.177	0.021	0.130	0.029
4243	ALTAL	880913	1.13	1.12	525.0	4.82	21.5	7.6	0.006	0.309	-0.006	0.048	-0.021	0.391	0.778	0.076	0.183	-0.013	0.001	0.025
4300	ALTAL	880927	0.99	1.04	525.0	4.87	18.4	6.9	-0.016	0.160	-0.081	0.038	-0.015	0.424	0.583	0.054	0.148	0.022	-0.009	0.020
4338	ALTAL	881018	1.04	1.02	550.0	4.24	64.7	27.4	0.013	0.231	-0.033	-0.033	-0.004	1.688	2.453	0.232	0.123	0.032	0.087	0.019
4324	ALTAL	881025	1.08	0.95	100.0	3.91	138.9	65.4	0.035	0.254	-0.065	-0.033	-0.005	3.303	6.747	0.628	0.191	0.061	0.344	0.043
4354	ALTAL	881101	1.01	1.17	550.0	4.66	24.8	11.6	0.021	0.680	-0.016	-0.051	-0.052	0.729	1.077	0.080	0.390	0.029	0.120	0.052
4398	ALTAL	881110	0.97	1.12	550.0	4.27	58.5	24.7	0.021	0.466	-0.028	-0.102	-0.021	1.442	2.426	0.230	0.295	0.029	0.148	0.042
4410	ALTAL	881115	0.98	1.23	550.0	4.86	20.0	7.0	0.011	0.558	-0.012	-0.077	-0.036	0.340	0.618	0.017	0.320	0.017	0.054	0.043
4411	ALTAL	881123	0.94	1.21	450.0	4.83	19.1	8.2	0.024	0.591	-0.011	-0.079	-0.036	0.265	0.902	0.114	0.334	0.026	0.079	0.042
4444	ALTAL	881206	1.02	1.11	550.0	4.09	85.3	33.6	0.035	0.264	-0.016	0.028	-0.025	1.617	3.254	0.136	0.093	0.040	0.152	0.016
4469	ALTAL	881213	1.03	1.13	500.0	4.21	66.0	26.0	0.018	0.409	-0.007	-0.014	-0.020	1.574	2.399	0.136	0.176	0.016	0.117	0.028
4470	ALTAL	881220	1.04	1.14	300.0	4.56	34.2	18.5	0.021	1.694	-0.007	-0.014	-0.021	0.823	1.856	0.187	0.959	0.056	0.116	0.126
4471	ALTAL	881229	1.00	1.42	525.0	4.89	15.8	5.0	0.007	0.197	-0.007	-0.014	-0.021	0.319	0.648	0.079	0.113	0.015	0.018	0.015

Delaware



□ Major city (for reference)

* EPA Acid Rain Site

DELAWARE

SITE	SITE NAME	NEAREST CITY	COUNTY	SAMPLING PERIOD[1] BEGIN	END	#SAMPLES	%NON-VOID[2]
DEGEO	Georgetown	Georgetown	Sussex			45	97.8
DELUM	Lum's Pond	Newark	New Castle			38	94.7

(1) "BEGIN" was JAN 88 and "END" was DEC 88 unless otherwise noted. For sites which were not operational during 1988, the date range of operation is given.

(2) Percentage of samples received which were not voided by GGC due to contamination.

Figure 2-1 (continued)
Site: DEGEO
Data Plots, Jan 1988 - Dec 1988

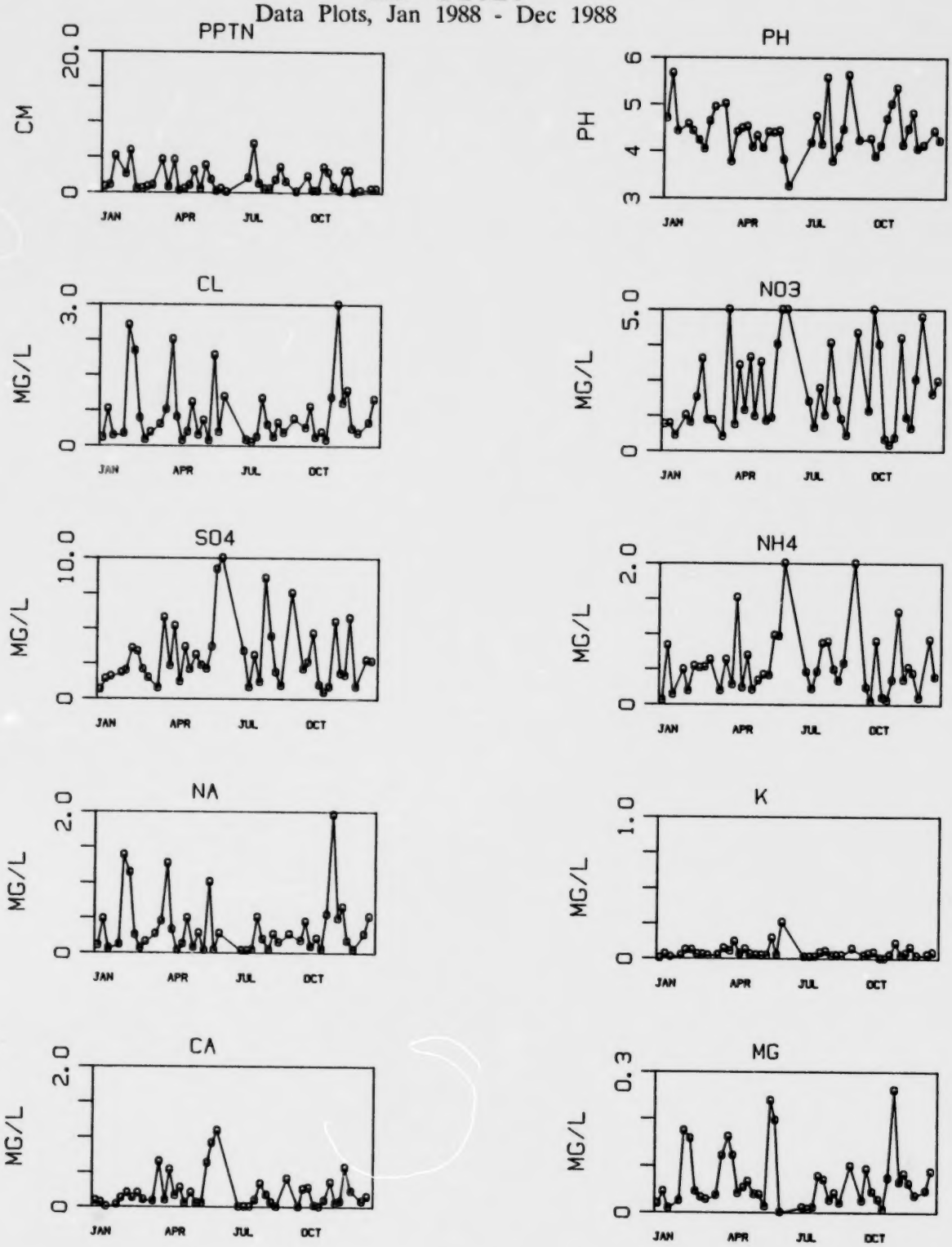
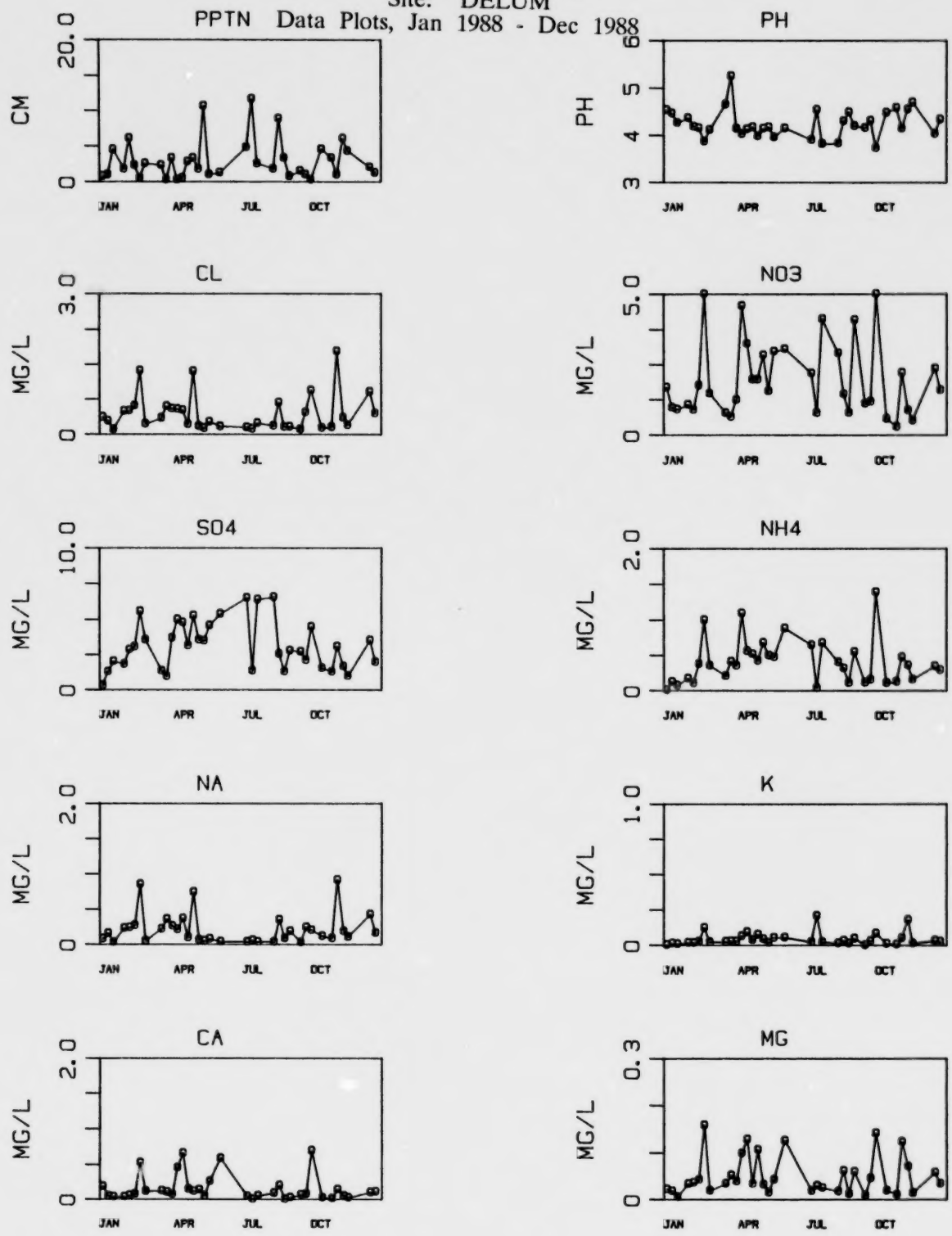


Figure 2-1 (continued)
Site: DELUM



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EPA State Operated Rain Network
1988 Sampling and Field Data

GGC ID	Site Code	Begin Day	Begin Time	End Day	End Time	Date Rec'd	Type	# Rain Events	Precip inches	Field Wt gm	Field Cond µmho/cm	Field pH	Comment Codes 1	Comment Codes 2
3526	DEGEO	880105	1135	880112	1110	880126	1.00	2	0.30	447.4	9.9	4.74	3	
3518	DEGEO	880112	1120	880119	1100	880125		3	0.40	449.8	10.9	5.56	3	
3545	DEGEO	880119	1105	880126	1040	880130		4	2.00	3726.6	17.0	4.43		
3589	DEGEO	880202	1045	880208	1150	880217		3	1.00	1655.8	18.0	4.55		
3610	DEGEO	880208	1155	880216	1110	880222		3	2.30	4629.2	29.0	4.45		
3647	DEGEO	880216	1115	880223	1350	880301		1	0.20	344.3	43.0	4.27	3	
3658	DEGEO	880223	1400	880229	1035	880307		2	0.20	405.0	45.0	4.05	3	
3669	DEGEO	880229	1045	880308	1310	880315		1	0.30	626.6	15.8	4.55		
3694	DEGEO	880308	1320	880315	1200	880323		3	0.40	1030.6	12.1	4.86	3	
3709	DEGEO	880315	1210	880321	1155	880328		1		35.5			3	99
3737	DEGEO	880321	1200	880329	1230	880406		2	1.80	3843.6	9.5	4.99		
3758	DEGEO	880329	1235	880406	1410	880415		1	0.30	500.5	88.0	3.81	3	
3778	DEGEO	880406	1410	880412	1120	880422		2	1.80	3091.1	27.6	4.41		
3802	DEGEO	880412	1130	880419	1140	880426		2	0.10	185.4	41.0	4.35	3	
3820	DEGEO	880419	1145	880426	1100	880503		1	0.20	351.2	16.2	4.54		
3837	DEGEO	880426	1110	880502	1055	880511		3	0.40	860.1	43.0	4.03	3	
3849	DEGEO	880502	1100	880510	1030	880517		4	1.20	2129.3	25.0	4.43		
3872	DEGEO	880510	1035	880517	1100	880524		1	0.20	440.3	42.6	4.06		
3884	DEGEO	880517	1110	880524	1100	880531		7	1.50	2661.3	23.8	4.44	3	
3919	DEGEO	880524	1110	880531	1100	880608		2	0.70	1237.3	21.8	4.42		
3928	DEGEO	880531	1105	880606	1310	880614		3		118.8			3	
3956	DEGEO	880606	1310	880613	1055	880628		1	0.20	465.5	91.1	3.79	3	
3957	DEGEO	880613	1100	880628	1109	880628		2		26.9			3	
4077	DEGEO	880712	1100	880719	1100	880809		2	0.80	1466.7	34.0	4.15	3	
4078	DEGEO	880719	1105	880726	1100	880809		4	2.70	4633.0	10.0	4.74	3	
4079	DEGEO	880726	1100	880802	1100	880809		3	0.50	1123.7	39.0	4.14		
4096	DEGEO	880802	1105	880809	1105	880815		6	0.20	514.7	11.9	5.64	3	
4125	DEGEO	880809	1115	880817	1105	880824		4	0.20	408.7	87.0	3.79	3	
4138	DEGEO	880817	1110	880823	1010	880829		3	0.70	1452.6	44.6	4.10	3	
4170	DEGEO	880823	1010	880830	1105	880915		4	1.40	2338.4	19.0	4.49		

EPA State Operated Rain Network
1988 Laboratory Data

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3526	DEGEO	880105	1.03	1.19	400.0	4.70	23.9	8.6	-0.003	0.166	-0.007	0.027	-0.046	0.949	0.641	0.058	0.106	-0.005	0.082	0.018
3518	DEGEO	880112	0.88	1.12	560.0	5.66		9.6	0.011	0.773	-0.008	0.025	-0.034	0.969	1.379	0.832	0.478	0.029	0.059	0.044
3545	DEGEO	880119	1.07	1.18	550.0	4.42	40.9	15.0	0.006	0.213	-0.005	0.079	0.161	0.548	1.557	0.134	0.061	0.009	-0.011	0.009
3589	DEGEO	880202	1.07	1.13	540.0	4.57	30.7	14.9	0.012	0.248	-0.017	0.035	-0.069	1.255	1.820	0.489	0.117	0.019	0.027	0.025
3610	DEGEO	880208	1.01	1.07	550.0	4.42	40.8	26.3	0.013	2.555	-0.018	0.038	-0.153	1.005	1.989	0.187	1.381	0.058	0.120	0.174
3647	DEGEO	880216	1.00	1.07	300.0	4.22	62.3	36.7	0.020	2.010	-0.006	0.040	-0.040	1.901	3.560	0.538	1.139	0.059	0.193	0.157
3658	DEGEO	880223	1.01	1.07	360.0	4.04	92.0	42.5	0.021	0.580	-0.008	0.054	-0.007	3.263	3.354	0.515	0.253	0.028	0.124	0.044
3669	DEGEO	880229	0.97	1.14	530.0	4.63	25.4	14.2	0.011	0.128	0.011	0.029	-0.013	1.101	2.070	0.527	0.070	0.026	0.193	0.032
3694	DEGEO	880308	0.95	1.11	550.0	4.94	15.4	10.5	0.009	0.280	-0.007	0.028	-0.006	1.086	1.480	0.628	0.159	0.020	0.097	0.027
3709	DEGEO	880315	9999	9999	35.0	6.43														
3737	DEGEO	880321	0.95	1.23	550.0	5.01	16.5	6.5	0.012	0.451	-0.014	-0.035	-0.015	0.513	0.750	0.190	0.266	0.023	0.080	0.036
3758	DEGEO	880329	1.00	1.06	100.0	3.77	166.7	80.2	0.041	0.765	-0.009	0.039	-0.012	7.529	5.773	0.631	0.450	0.070	0.646	0.121
3778	DEGEO	880406	1.00	1.10	550.0	4.41	40.6	25.8	0.009	2.258	-0.005	0.025	-0.009	0.938	2.328	0.278	1.268	0.053	0.094	0.161
3802	DEGEO	880412	1.04	1.01	140.0	4.49	38.4	33.5	0.034	0.606	-0.013	0.037	-0.005	3.044	5.185	1.516	0.328	0.120	0.530	0.122
3820	DEGEO	880419	0.95	1.26	310.0	4.52	34.4	12.9	0.016	0.111	-0.009	0.048	-0.006	1.444	1.209	0.234	0.035	0.033	0.159	0.041
3837	DEGEO	880426	0.96	1.10	550.0	4.08	79.2	39.7	0.021	0.291	-0.007	0.050	-0.008	3.312	3.665	0.693	0.128	0.066	0.272	0.053
3849	DEGEO	880502	1.02	1.17	550.0	4.32	47.0	22.2	0.009	0.919	-0.005	0.049	-0.003	1.228	2.075	0.207	0.492	0.030	0.053	0.066
3872	DEGEO	880510	1.02	1.08	390.0	4.06	90.9	38.6	0.021	0.224	-0.006	0.032	-0.005	3.149	3.119	0.338	0.080	0.024	0.200	0.038
3884	DEGEO	880517	1.01	1.12	550.0	4.40	44.5	20.3	0.008	0.534	-0.002	-0.030	-0.009	1.063	2.357	0.417	0.276	0.022	0.055	0.038
3919	DEGEO	880524	1.02	1.15	550.0	4.39	45.5	18.5	0.011	0.114	0.065	0.070	-0.014	1.176	2.108	0.410	0.034	0.021	0.057	0.013
3928	DEGEO	880531	1.02	1.06	115.0	4.42	43.4	35.0	0.036	1.924	-0.001	-0.029	-0.009	3.781	3.690	0.979	1.008	0.145	0.627	0.238
3956	DEGEO	880606	1.08	0.94	355.0	3.81	179.9	88.5	0.041	0.288	-0.005	-0.021	-0.001	5.686	9.203	0.967	0.040	0.026	0.910	0.196
3957	DEGEO	880613	1.16	1.03	25.0	3.25		267.0	0.165	1.043	-0.005	-0.021	-0.001	16.802	27.682	2.440	0.272	0.257	1.084	-0.053
4077	DEGEO	880712	1.10	1.00	550.0	4.17	77.6	33.2	0.028	0.126	-0.009	0.025	-0.045	1.760	3.368	0.456	0.032	0.011	-0.024	0.010
4078	DEGEO	880719	1.05	1.16	150.0	4.74	22.7	8.5	0.007	0.078	-0.009	0.037	-0.046	0.837	0.814	0.219	0.031	0.012	-0.024	0.007
4079	DEGEO	880726	1.07	1.03	550.0	4.14	81.4	34.3	0.022	0.184	-0.008	0.025	-0.047	2.236	3.088	0.461	0.046	0.013	-0.025	0.011
4096	DEGEO	880802	0.89	1.06	425.0	5.57		11.4	0.016	1.006	-0.003	0.039	-0.036	1.273	1.206	0.868	0.507	0.042	0.096	0.077
4125	DEGEO	880809	1.04	0.99	320.0	3.78	181.3	83.1	0.047	0.437	-0.005	-0.019	-0.027	3.827	8.588	0.884	0.196	0.052	0.329	0.070
4138	DEGEO	880817	1.04	1.03	550.0	4.08	91.0	40.3	0.019	0.188	-0.004	-0.019	-0.032	1.794	4.420	0.491	0.045	0.020	0.168	0.026
4170	DEGEO	880823	1.00	1.12	550.0	4.46	36.6	17.7	0.011	0.481		-0.053	-0.031	1.135	1.887	0.336	0.264	0.023	0.061	0.041

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EPA State Operated Rain Network
1988 Sampling and Field Data

GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
4167	DEGEO	880830	1110	880907		880915		2	0.60	1147.1	7.0	5.32		
4239	DEGEO	880913	913	880920	1030	880923		3	0.04	66.9				
4273	DEGEO	880928	1105	881004	1125	881011		2	0.90	1747.1	28.0	4.26	3	
4294	DEGEO	881004	1220	881011	1100	881020		1	0.10	118.8			3	
4301	DEGEO	881011	1105	881019	1150	881024		2	0.10	271.1	46.1	3.99	3	
4312	DEGEO	881019	1155	881025	1240	881031		2	1.40	2537.1	12.0	4.62		
4339	DEGEO	881025	1250	881101	1155	881109		1	1.10	1909.4	6.2	4.94	3	
4384	DEGEO	881101	1200	881109	1100	881117		2	0.30	527.0	9.3	5.38	3	
4397	DEGEO	881109	1100	881116	1055	881117		2		132.6				
4404	DEGEO	881116	1100	881122	1100	881202		3	1.20	2007.4	19.2	4.45		
4412	DEGEO	881122	1105	881128	1117	881206		1	1.20	1983.8	15.5	4.80		
4437	DEGEO	881128	1120	881206	1242	881215				35.7			3	
4445	DEGEO	881206	1250	881213	1230	881219		1	0.10	123.0			3	
4473	DEGEO	881220	1130	881227	1215	890119		1	0.20	412.0	25.0	4.50		
4474	DEGEO	881227	1215	890103	1310	890119		1	0.20	450.2	34.6	4.24		
3527	DELUM	880105	1130	880112	1300	880126	1.00	1	0.30	742.8	13.9	4.52	3	
3519	DELUM	880112	1300	880119	1400	880125		1		658.7	16.8	4.49		
3548	DELUM	880119	1400	880126	1115	880202				3062.8	20.0	4.38	3	
3568	DELUM	880126	1115	880202	1215	880209				35.8			3	99
3590	DELUM	880202	1215	880209	1015	880217		2	0.70	1328.3	22.0	4.36		
3611	DELUM	880209	1115	880216	1005	880222		2	2.40	4251.6	30.0	4.43		
3636	DELUM	880216	1005	880223	1030	880229		2	0.90	1726.8	36.0	4.21		
3659	DELUM	880223	1030	880301	1050	880307		2	0.20				3	
3670	DELUM	880301	1050	880308	1045	880315		2	1.00	1737.0	34.6	4.17	3	
3734	DELUM	880322	1201	880329	1332	880405		1	0.90	1457.9	14.2	4.63		
3759	DELUM	880329	1332	880405	1258	880415		2	0.10	504.2	9.1	5.03		
3777	DELUM	880405	1258	880412	1051	880421		1	1.30	2126.3	38.0	4.19		
3797	DELUM	880412	1130	880419	1140	880426		2	0.10	492.4	55.0	3.98	13	
3828	DELUM	880419	1355	880426	1310	880507		1	0.20	319.0	48.5	4.09	3	

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4167	DEGEO	880830	0.84	1.12	550.0	5.63		5.7	0.008	0.274	-0.001	-0.052	-0.028	0.553	0.933	0.582	0.150	0.022	0.001	0.020
4239	DEGEO	880913	1.01	1.00	50.0	4.23		51.1	-0.001	0.570	-0.010	-0.039	-0.021	4.178	7.531	2.471	0.265	0.070	0.405	0.099
4273	DEGEO	880928	1.02	1.10	550.0	4.26	56.8	24.1	0.015	0.383	-0.055	0.033	-0.015	1.423	2.117	0.238	0.173	0.023	-0.033	0.025
4294	DEGEO	881004	1.03	1.01	130.0	3.88	136.2	60.6	0.038	0.828	-0.059	0.058	-0.011	6.005	2.625	0.047	0.441	0.034	0.254	0.092
4301	DEGEO	881011	1.11	0.98	250.0	4.11	87.9	45.1	0.037	0.177	-0.013	-0.047	-0.047	3.777	4.654	0.892	0.091	0.043	0.272	0.044
4312	DEGEO	881019	0.96	1.04	525.0	4.69	24.2	10.4	0.018	0.288	-0.082	-0.022	-0.011	0.416	0.976	0.097	0.208	0.001	0.015	0.027
4339	DEGEO	881025	1.06	1.19	550.0	5.01	15.1	4.3	-0.009	0.128	-0.031	-0.033	-0.004	0.217	0.474	0.059	0.059	-0.006	-0.015	0.007
4384	DEGEO	881101	0.94	1.05	500.0	5.35	9.2	8.6	0.013	1.036	-0.017	-0.070	-0.031	0.468	0.856	0.345	0.549	0.025	0.091	0.074
4397	DEGEO	881109	1.02	1.02	150.0	4.13	77.3	57.5	0.039	3.441	-0.027	-0.099	-0.022	3.992	5.503	1.309	1.956	0.109	0.351	0.261
4404	DEGEO	881116	1.00	1.11	525.0	4.47	37.8	19.0	0.009	0.910	-0.016	-0.066	-0.038	1.189	1.806	0.347	0.489	0.023	0.055	0.065
4412	DEGEO	881122	0.97	1.13	550.0	4.81	20.4	14.1	0.015	1.180	-0.011	-0.081	-0.036	0.813	1.689	0.523	0.653	0.037	0.081	0.082
4437	DEGEO	881128	1.14	0.98	42.0	4.05		49.8	0.034	0.364	-0.006	0.105	-0.022	2.542	5.776	0.442	0.170	0.079	0.563	0.062
4445	DEGEO	881206	1.09	1.29	100.0	4.12	79.2	27.3	0.018	0.272	-0.015	0.093	-0.026	4.746	0.858	0.092	0.051	0.020	0.226	0.036
4473	DEGEO	881220	0.98	1.13	375.0	4.43	39.6	22.7	0.023	0.494	-0.007	-0.014	-0.022	2.039	2.774	0.916	0.268	0.029	0.080	0.046
4474	DEGEO	881227	1.04	1.08	400.0	4.22	61.9	31.3	-0.005	0.991	-0.007	0.015	-0.023	2.489	2.692	0.389	0.517	0.042	0.149	0.087
3527	DELUM	880105	1.03	1.16	550.0	4.53	29.7	12.3	0.015	0.371	-0.007	0.021	-0.048	1.686	0.307	0.005	0.080	-0.005	0.185	0.022
3519	DELUM	880112	1.02	1.18	550.0	4.46	36.8	14.4	0.008	0.283	-0.008	0.030	0.134	0.967	1.270	0.120	0.156	0.011	0.046	0.018
3548	DELUM	880119	1.03	1.17	550.0	4.26	57.1	20.6	0.013	0.103	-0.005	0.028	0.186	0.901	2.014	0.069	0.027	0.007	0.033	0.005
3568	DELUM	880126	9999	9999	30.0	4.43														
3590	DELUM	880202	1.04	1.13	550.0	4.36	45.7	19.5	0.011	0.493	-0.017	0.036	-0.072	1.063	1.810	0.169	0.231	0.015	0.032	0.033
3611	DELUM	880209	1.01	1.10	550.0	4.18	68.2	28.1	0.007	0.500	-0.018	0.031	-0.154	0.882	2.849	0.103	0.239	0.015	0.056	0.036
3636	DELUM	880216	1.01	1.08	550.0	4.15	74.0	32.8	0.013	0.607	-0.010	0.042	-0.101	1.750	3.056	0.374	0.270	0.025	0.071	0.042
3659	DELUM	880223	1.00	1.04	150.0	3.87	132.7	72.5	0.049	1.366	-0.008	0.051	-0.007	6.796	5.553	0.998	0.851	0.123	0.521	0.158
3670	DELUM	880301	1.00	1.11	550.0	4.11	78.2	33.3	0.024	0.221	-0.005	0.022	0.050	1.456	3.546	0.351	0.051	0.021	0.113	0.019
3734	DELUM	880322	0.96	1.18	550.0	4.65	26.5	11.3	0.011	0.345	-0.016	-0.033	-0.016	0.768	1.319	0.203	0.219	0.023	0.118	0.034
3759	DELUM	880329	0.89	1.05	450.0	5.25	11.5	8.2	0.008	0.597	-0.009	0.035	-0.012	0.635	0.940	0.408	0.360	0.027	0.101	0.052
3777	DELUM	880405	1.03	1.09	550.0	4.14	72.4	33.3	0.017	0.545	-0.006	0.027	-0.009	1.233	3.689	0.349	0.262	0.027	0.069	0.039
3797	DELUM	880412	1.01	1.05	400.0	4.03	95.8	51.4	0.036	0.537	-0.014	0.037	-0.005	4.582	4.989	1.091	0.209	0.065	0.452	0.099
3828	DELUM	880419	1.01	1.11	290.0	4.13	72.7	39.9	0.028	0.512	-0.008	0.040	-0.007	3.234	4.771	0.560	0.367	0.091	0.656	0.128

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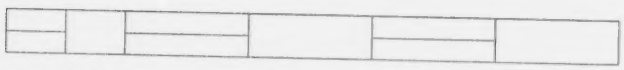
GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3838	DELUM	880426	1310	880503	1113	880511		2	1.10	1819.0	34.0	4.27	3	
3850	DELUM	880503	1113	880510	850	880517		4	1.30	2342.1	55.7	4.00	3	
3867	DELUM	880510	850	880517	926	880523		2	0.70	1156.1	39.6	4.15	3	
3885	DELUM	880517	926	880524	1026	880531		7	4.20	7345.4	34.7	4.26	3	
3920	DELUM	880524	1026	880531	1132	880608		3	0.40	745.2	54.4	3.99	3	
3929	DELUM	880531	1132	880607	1126	880614		1	0.10	221.0	80.5	3.89	3	99
3958	DELUM	880607	1126	880614	1408	880628		1	0.50	1010.5	47.5	4.14	3	
4080	DELUM	880712	1248	880719	1427	880809		1	1.90	3102.7	66.0	3.95	3	
4081	DELUM	880719	1427	880726	1245	880809		6	4.60	7253.8	13.0	4.56	3	33
4082	DELUM	880726	1245	880802		880809		6	1.00	2049.8	78.0	3.87	3	
4149	DELUM	880816	908	880823	930	880830		3	0.70	1215.6	74.2	3.81	3	
4218	DELUM	880823	930	880830	917	880922		4	3.50		27.0	4.27		
4219	DELUM	880830	923	880906	1100	880922		2	1.30	2350.6	14.0	4.54		
4230	DELUM	880906	1105	880913	1530	880922		1	0.30	29.2			3	
4256	DELUM	880920	755	880927	1128	881005		3	0.60	1031.0	32.0	4.09		
4289	DELUM	880927	1128	881004	1307	881011		2	0.40	670.7	25.0	4.43	3	
4293	DELUM	881004	1307	881011	1118	881020		1	0.10	98.6			3	
4313	DELUM	881018	1049	881025	1117	881031		3	1.80	2916.7	17.0	4.33		
4390	DELUM	881031	1104	881107	930	881117		2	1.30	2318.9	11.5	4.53		
4370	DELUM	881107	930	881115	1000	881117		2	0.40	776.8	39.4	4.17	3	
4405	DELUM	881115	1000	881121	1100	881202		3	2.40	4126.1	11.5	4.68	3	
4421	DELUM	881121	1100	881129	1240	881206		1	1.70	2934.3	12.0	4.61		
4476	DELUM	881220	1145	881227	1013	890119		3	0.80	1489.1	43.2	4.09		
4477	DELUM	881227	1015	890103	1100	890119		2	0.50	788.2	24.0	4.31		

EPA State Operated Rain Network
1988 Laboratory Data

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3838	DELUM	880426	0.95	1.17	550.0	4.17	65.4	29.5	0.014	0.215	-0.007	0.049	-0.008	1.962	3.142	0.515	0.098	0.038	0.144	0.034
3850	DELUM	880503	1.03	1.06	550.0	3.98	106.2	51.4	0.015	1.352	-0.005	0.034	-0.003	1.959	5.253	0.424	0.741	0.075	0.115	0.106
3867	DELUM	880510	1.03	1.10	550.0	4.14	75.0	34.5	0.020	0.173	-0.006	0.033	-0.005	2.832	3.549	0.677	0.062	0.044	0.137	0.032
3885	DELUM	880517	1.01	1.11	550.0	4.17	70.4	30.3	0.009	0.133	-0.002	-0.031	-0.009	1.544	3.478	0.497	0.048	0.017	0.046	0.015
3920	DELUM	880524	0.97	1.07	550.0	3.96	115.0	49.3	0.032	0.264	-0.002	-0.039	-0.013	2.962	4.560	0.474	0.077	0.051	0.257	0.042
3929	DELUM	880531	9999	9999	160.0	3.93														
3958	DELUM	880607	1.04	0.97	500.0	4.15	85.1	44.8	0.040	0.169	-0.006	-0.021	-0.001	3.052	5.364	0.881	0.036	0.054	0.583	0.126
4080	DELUM	880712	1.06	0.98	550.0	3.90	139.5	61.0	0.037	0.149	-0.007	-0.022	-0.050	2.188	6.477	0.644	0.032	0.021	0.039	0.018
4081	DELUM	880719	1.09	1.04	540.0	4.54	32.4	13.6	0.010	0.123	-0.006	-0.020	-0.052	0.780	1.339	0.037	0.057	0.207	-0.026	0.030
4082	DELUM	880726	1.07	0.97	550.0	3.82	164.1	73.8	0.037	0.238	-0.006	-0.020	-0.053	4.106	6.375	0.675	0.036	0.021	0.049	0.025
4149	DELUM	880816	1.07	0.99	550.0	3.83	161.4	68.5	0.023	0.181	-0.005	-0.016	-0.021	2.894	6.533	0.402	0.032	0.012	0.088	0.017
4218	DELUM	880823	0.99	1.11	550.0	4.30	52.5	24.9	0.012	0.673	-0.020	0.058	-0.019	1.436	2.531	0.316	0.350	0.032	0.195	0.062
4219	DELUM	880830	1.07	1.22	550.0	4.49	34.9	12.7	0.010	0.161	-0.019	0.060	-0.019	0.777	1.279	0.111	0.085	0.011	-0.023	0.012
4230	DELUM	880906	1.23	1.06	42.0	4.20		32.9	0.043	0.163	-0.081	0.090	-0.016	4.071	2.793	0.549	0.188	0.047	0.024	0.059
4256	DELUM	880920	1.00	1.14	550.0	4.16	71.3	27.1	0.009	0.108	-0.005	0.057	-0.019	1.109	2.714	0.116	0.026	-0.010	0.064	0.008
4289	DELUM	880927	1.04	1.27	550.0	4.31	51.8	19.4	0.023	0.469	-0.061	0.047	-0.007	1.175	2.106	0.153	0.245	0.030	0.075	0.045
4293	DELUM	881004	1.04	1.08	100.0	3.73	199.0	90.8	0.076	0.936	-0.060	0.071	-0.010	12.733	4.461	1.385	0.203	0.082	0.693	0.141
4313	DELUM	881018	1.00	1.05	550.0	4.48	36.8	15.1	0.016	0.141	-0.082	0.026	-0.011	0.571	1.526	0.108	0.117	0.010	0.021	0.019
4390	DELUM	881031	0.95	1.19	575.0	4.58	28.7	10.7	0.011	0.158	-0.022	-0.084	-0.026	0.296	1.276	0.124	0.087	0.005	0.011	0.010
4370	DELUM	881107	0.98	1.07	575.0	4.15	72.0	38.5	0.027	1.779	-0.011	-0.045	-0.045	2.204	3.085	0.474	0.912	0.051	0.141	0.123
4405	DELUM	881115	0.97	1.25	575.0	4.55	33.5	13.9	0.012	0.354	-0.015	0.246	-0.038	0.868	1.661	0.359	0.186	0.179	0.050	0.071
4421	DELUM	881121	0.97	1.22	575.0	4.70	23.6	8.6	0.011	0.200	-0.018	-0.062	-0.028	0.515	0.971	0.157	0.108	0.012	0.021	0.014
4476	DELUM	881220	1.00	1.09	550.0	4.04	93.1	41.4	0.023	0.907	-0.007	-0.014	-0.024	2.353	3.518	0.346	0.427	0.032	0.099	0.058
4477	DELUM	881227	1.04	1.10	550.0	4.34	48.5	21.8	0.019	0.446	-0.007	-0.013	-0.025	1.588	1.976	0.292	0.165	0.025	0.109	0.033

Georgia



□ Major city (for reference)

* EPA Acid Rain Site

GEORGIA

SITE	SITE NAME	NEAREST CITY	COUNTY	SAMPLING PERIOD[1] BEGIN	END	#SAMPLES	%NON-VOID[2]
GABFG	B.F. Grant Forest	Eatonton	Putnam			34	91.2
GADAW	Dawsonville	Gainesville	Dawson			44	95.4
GADUF	McDuffie	Augusta	McDuffie			25	96.0
GAHIW	Hiawassee	Hiawassee	Towns			25	100.0
GASUM	Summerville	Summerville	Chattooga			38	100.0
GAWAY	Waycross	Waycross	Ware			30	96.7

(1) "BEGIN" was JAN 88 and "END" was DEC 88 unless otherwise noted. For sites which were not operational during 1988, the date range of operation is given.

(2) Percentage of samples received which were not voided by GGC due to contamination.

Figure 2-1 (continued)
Site: GABFG
Data Plots, Jan 1988 - Dec 1988

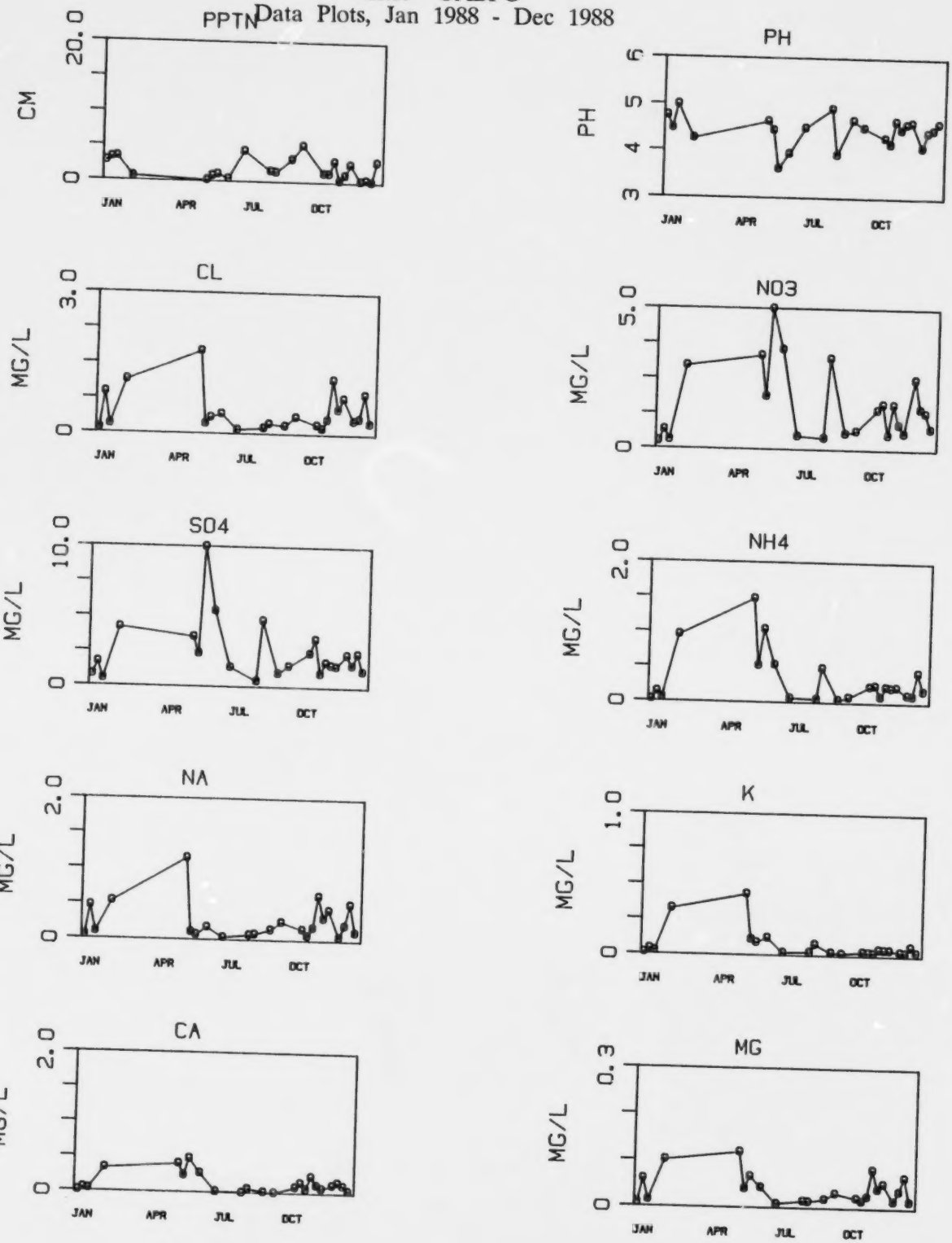


Figure 2-1 (continued)
Site: GADAW
PPTN Data Plots, Jan 1988 - Dec 1988

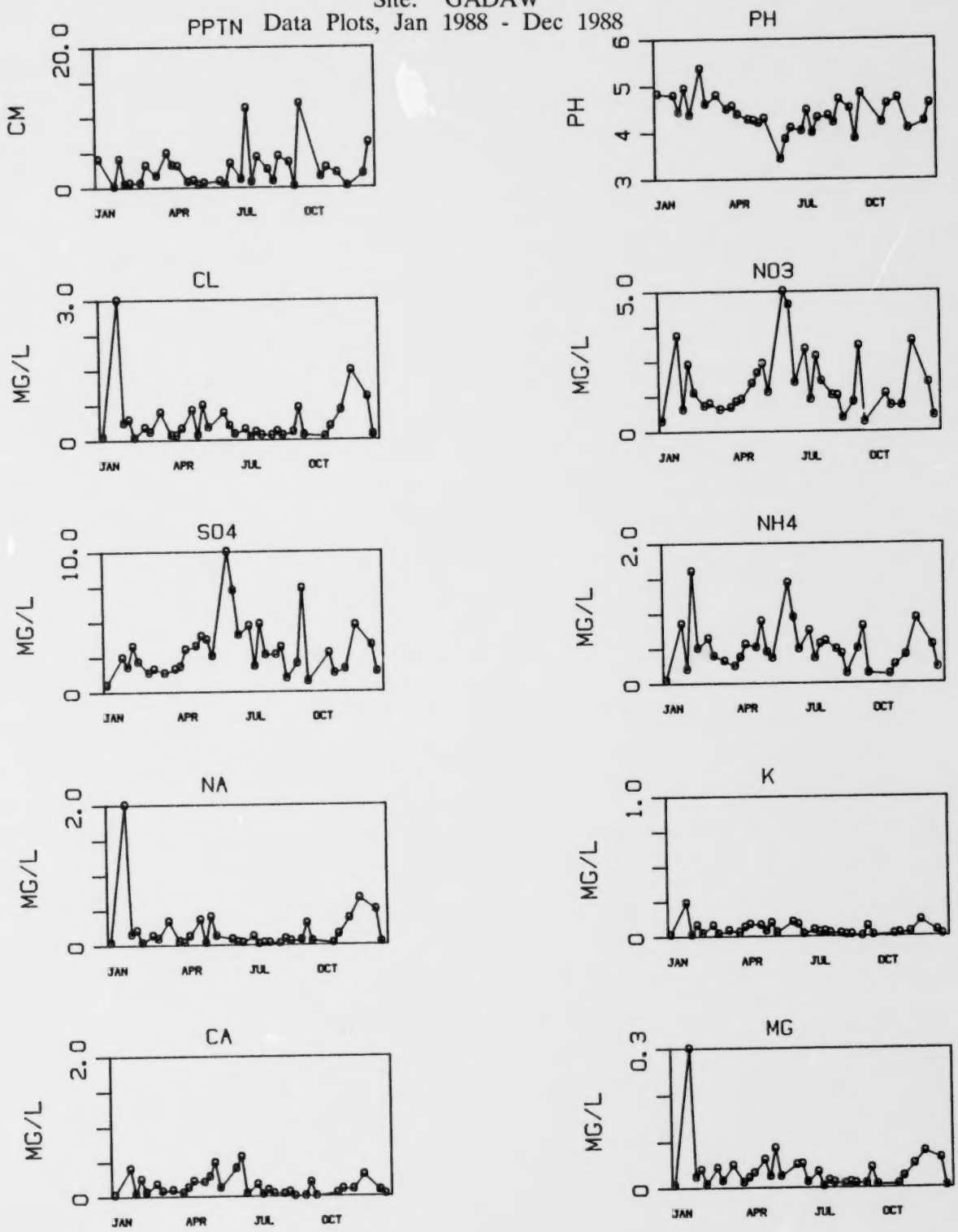


Figure 2-1 (continued)
Site: GADUF
PPTN Data Plots, Jan 1988 - Dec 1988

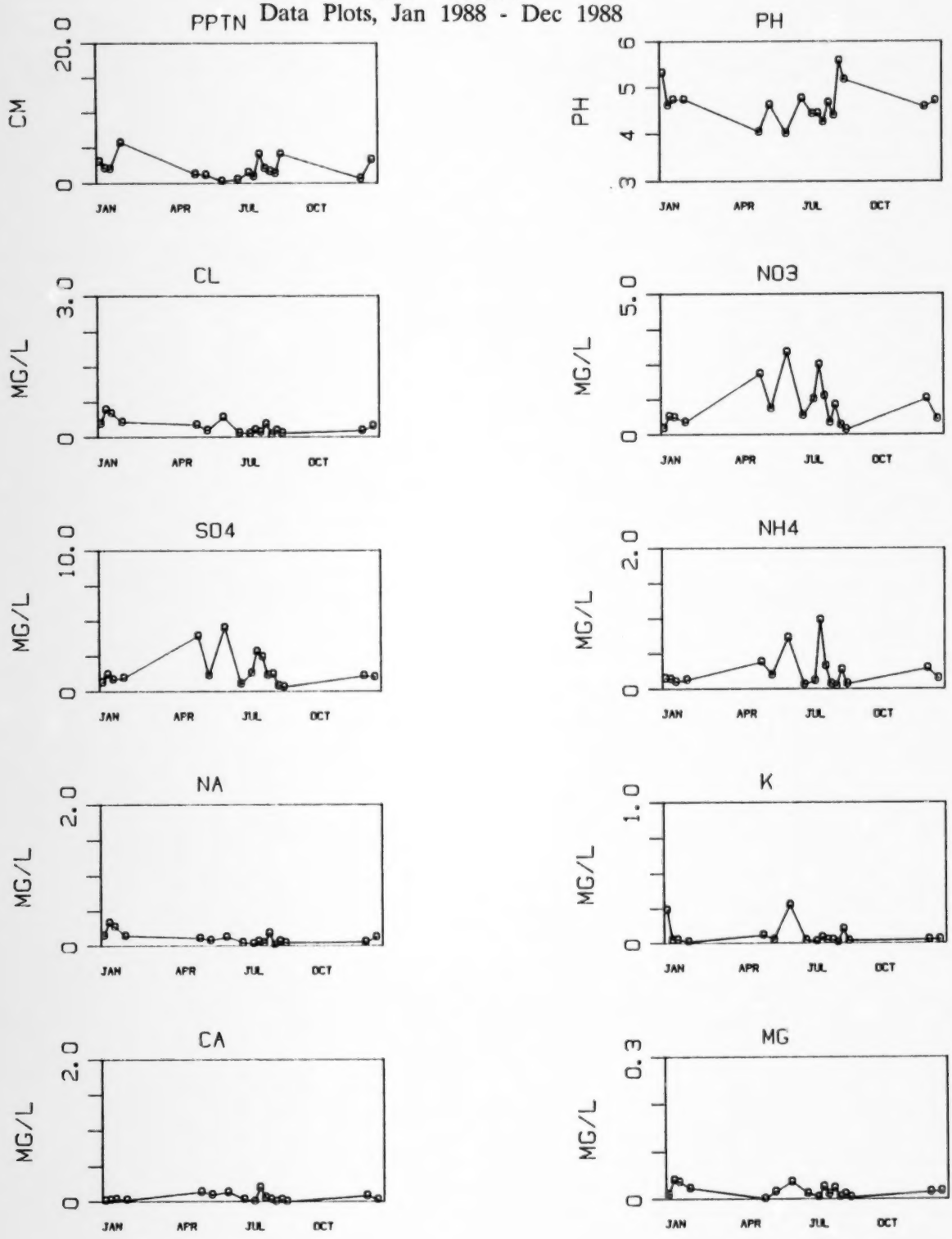


Figure 2-1 (continued)
Site: GAHIW
PPTN Data Plots, Jan 1988 - Dec 1988

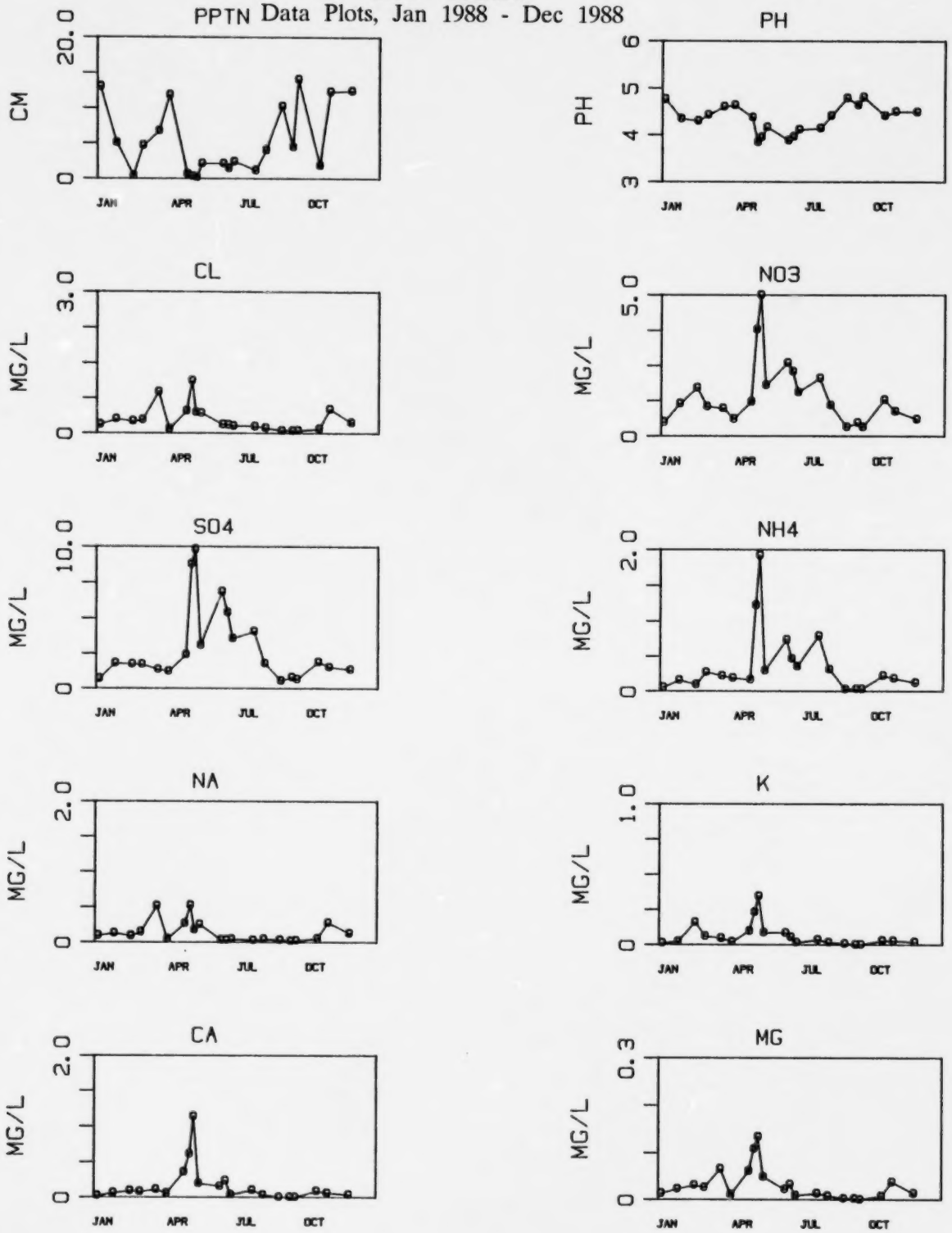


Figure 2-1 (continued)
Site: GASUM
Data Plots, Jan 1988 - Dec 1988

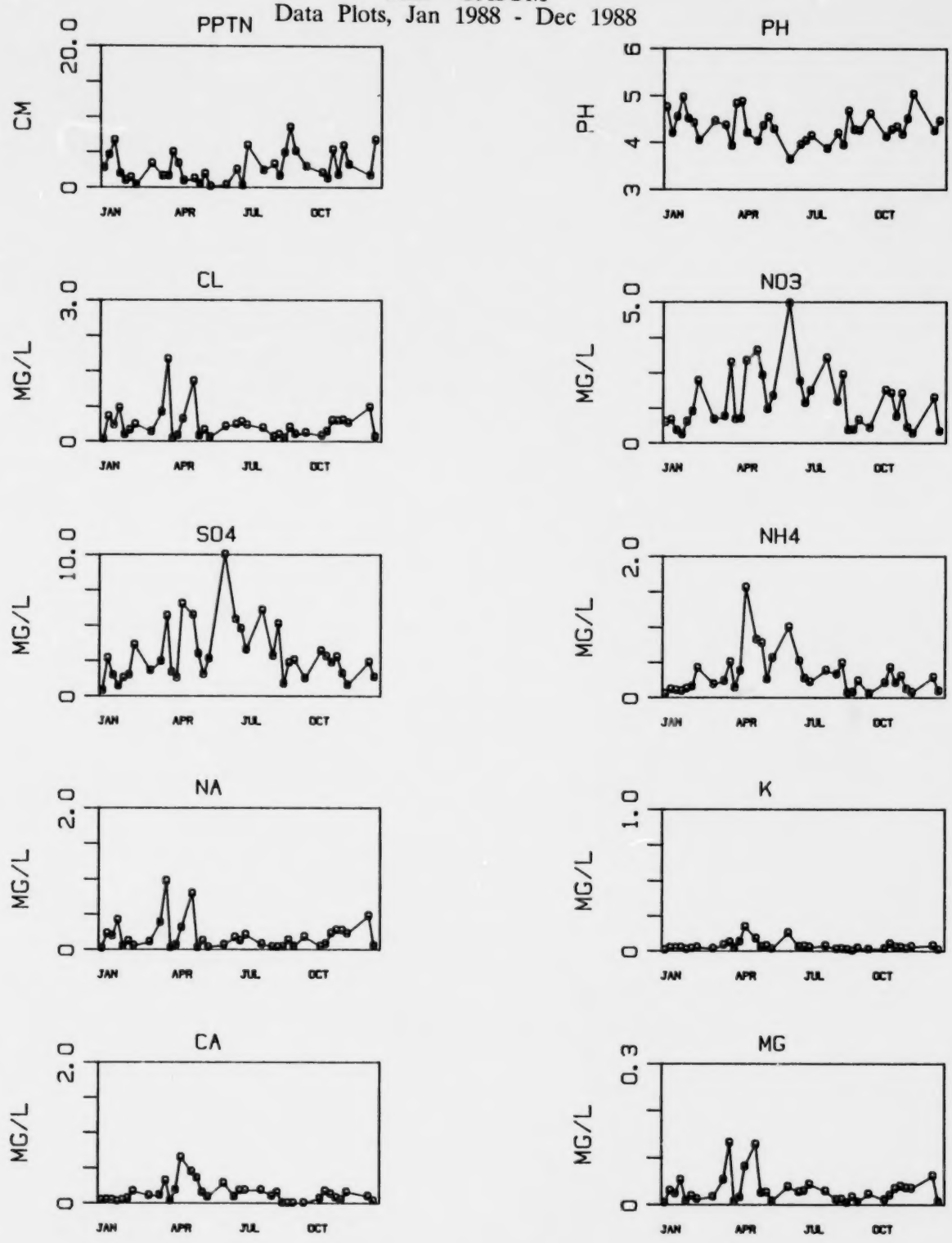
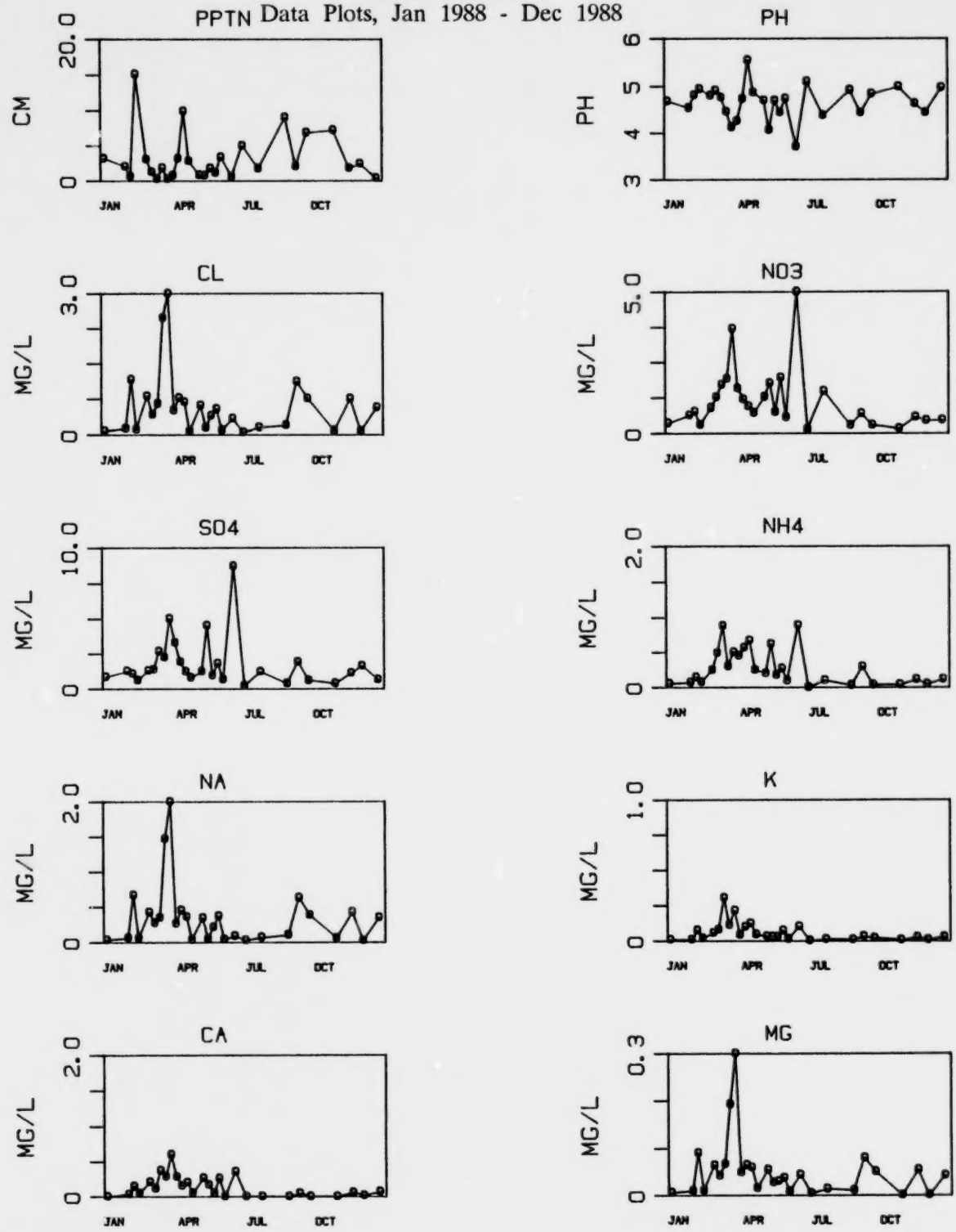


Figure 2-1 (continued)
Site: GAWAY
PPTN Data Plots, Jan 1988 - Dec 1988



GA88

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Page 1

EPA State Operated Rain Network
1988 Sampling and Field Data

GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3509	GABFG	880105	1500	880112	1100	880121	2.00	3	1.06	1593.0	9.3	4.82	3	33
3520	GABFG	880112	1030	880119	1400	880125		3	1.26	2261.0	21.9	4.48	3	33
3580	GABFG	880119	1400	880126	1530	880210		2	1.30	2186.0	20.7	4.50	3	33
3591	GABFG	880202	1005	880209	1000	880217		3	2.90	4478.5	10.9	4.66	3	34
3637	GABFG	880209	1000	880216	1030	880229		2	0.22	135.5	39.8	4.26	3	21
3695	GABFG	880301	1630	880308	1415	880323		1		231.0	8.7	5.95	3	213399
3706	GABFG	880308	1415	880315	915	880325		2		786.0	25.6	4.49	23	213334
3725	GABFG	880315	915	880322	1000	880330	10.00	1	0.55	608.0	58.1	4.15	3	213334
3803	GABFG	880322	912	880329	853	880426	10.00	1	0.60	1030.0	46.5	4.37	123	323399
3791	GABFG	880405	930	880412	930	880425		2		3115.0	20.8	4.56	3	213234
3829	GABFG	880412	935	880419	1200	880507	10.00	3	1.75	3517.0	10.4	4.92	3	213134
3830	GABFG	880419	1200	880426	1604	880507	10.00	2	1.30	2242.0	37.2	4.36	3	213134
3910	GABFG	880510	930	880517	900	880607	10.00	3	0.75	1208.0	40.9	4.03	13	2134
3921	GABFG	880517	900	880524	930	880608		1	0.05	81.0	32.6	4.03	3	
3949	GABFG	880524	930	880531	915	880625		2	0.30	499.0	23.9	4.41	3	
3950	GABFG	880531	915	880607	930	880625		2	0.40	661.0	115.2	3.59	3	
3965	GABFG	880607	930	880614	900	880630		1	0.05	87.0	65.4	4.00	13	99
3959	GABFG	880614	900	880621	930	880628		1	0.15	250.0	68.6	3.85	3	
4020	GABFG	880621	930	880628	900	880725		1	0.55	942.0	80.2	3.76	3	34
4021	GABFG	880705	900	880712	915	880725		2	1.70	2321.0	15.2	4.46	3	
4131	GABFG	880809	900	880816	900	880826		2	0.60	1080.0	6.6	5.00	3	
4220	GABFG	880816	900	880823	915	880922		3	0.55	186.0	16.9	4.95	3	
4302	GABFG	880906	900	880913	900	881019		3		2155.0	12.0	4.80	3	
4303	GABFG	880920	900	880920	900	881019		2		3537.0	17.4	4.70		
4325	GABFG	881018	1045	881025	1000	881109		2	0.50	961.0	26.2	4.18	3	
4326	GABFG	881025	1000	881101	1400	881109		3	0.48	719.0	33.6	4.13		
4373	GABFG	881101	1400	881108	1030	881117		2	1.15	1852.0	11.5	4.64	3	33
4446	GABFG	881108	1600	881115	2000	881219		1	0.10	149.0	21.4	4.46	3	
4447	GABFG	881115	2000	881122	1130	881219		2	0.41	760.0	14.4	4.62	3	
4459	GABFG	881122	1130	881129	1200	890102		2	1.00	1692.0	15.3	4.61	3	

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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3509	GABFG	880105	1.06	1.30	475.0	4.74	17.9	6.4	-0.002	0.089	-0.095	0.017	-0.170	0.245	0.774	0.022	0.043	0.009	-0.009	0.006
3520	GABFG	880112	1.02	1.11	550.0	4.46	36.9	17.5	0.011	0.862	-0.008	0.026	-0.037	0.653	1.667	0.132	0.463	0.038	0.040	0.059
3580	GABFG	880119	1.00	1.19	475.0	4.98	15.3	4.8	-0.002	0.177	-0.022	0.009	-0.009	0.292	0.490	0.047	0.097	0.022	0.028	0.013
3591	GABFG	880202	1.08	1.13	500.0	4.78	19.8	8.1	0.008	0.311	-0.017	0.029	-0.075	0.358	0.841	0.094	0.144	0.012	0.017	0.022
3637	GABFG	880209	1.11	1.07	110.0	4.25	59.5	37.6	0.030	1.137	-0.009	0.454	-0.097	2.936	4.175	0.952	0.531	0.323	0.331	0.101
3695	GABFG	880301	9999	9999	140.0	6.08														
3706	GABFG	880308	0.99	1.09	525.0	4.46	35.7	20.6	0.016	0.226	-0.021	-0.015	-0.020	1.576	2.660	0.590	0.126	0.096	0.208	0.044
3725	GABFG	880315	1.16	1.04	500.0	4.25	60.9	51.1	0.053	0.530	-0.023	1.339	-0.018	3.795	7.780	1.373	0.234	1.164	1.016	0.270
3803	GABFG	880322	9999	9999	475.0	4.43														
3791	GABFG	880405	0.95	1.09	475.0	4.69	24.9	18.3	0.019	0.415	-0.015	0.115	-0.005	1.502	2.734	0.540	0.282	0.580	0.300	0.123
3829	GABFG	880412	0.95	1.09	525.0	4.91	17.7	9.1	0.011	0.109	-0.008	0.095	-0.007	0.819	1.192	0.362	0.061	0.124	0.117	0.036
3830	GABFG	880419	0.98	1.07	525.0	4.33	50.2	33.0	0.024	0.513	-0.008	0.073	-0.007	2.276	4.742	1.196	0.247	0.245	0.385	0.086
3910	GABFG	880510	1.00	1.06	525.0	4.07	91.3	41.5	0.018	0.255	-0.004	-0.044	-0.017	2.668	4.339	0.569	0.086	0.131	0.269	0.054
3921	GABFG	880517	0.92	1.00	42.0	4.63		33.0	0.077	1.760	-0.002	-0.039	-0.013	3.321	3.534	1.478	1.146	0.430	0.404	0.119
3949	GABFG	880524	1.00	1.04	480.0	4.44	40.0	21.7	0.024	0.214	-0.003	0.028	-0.001	1.882	2.357	0.523	0.106	0.112	0.236	0.040
3950	GABFG	880531	1.05	1.00	500.0	3.61	259.8	117.8	0.071	0.351	-0.003	-0.016	-0.001	5.351	12.058	1.040	0.069	0.090	0.477	0.067
3965	GABFG	880607	9999	9999	60.0	4.10														
3959	GABFG	880614	1.06	0.96	215.0	3.93	134.9	61.0	0.058	0.422	-0.006	-0.022	-0.001	3.534	5.413	0.533	0.176	0.124	0.270	0.043
4020	GABFG	880621	1.03	1.00	500.0	3.74	191.7	86.6	0.034	0.237	-0.007	-0.023	-0.018	4.183	8.489	0.824	0.050	0.095	0.250	0.034
4021	GABFG	880705	1.05	1.19	510.0	4.49	39.5	12.3	0.009	0.088	-0.007	0.030	-0.018	0.473	1.383	0.061	0.034	0.020	0.009	0.008
4131	GABFG	880809	1.01	1.19	485.0	4.91	18.2	5.2	0.009	0.127	-0.003	0.031	-0.040	0.408	0.419	0.051	0.073	0.025	-0.019	0.015
4220	GABFG	880816	1.01	1.06	130.0	3.91	123.6	54.1	0.038	0.219	-0.019	0.052	-0.019	3.227	4.740	0.487	0.083	0.081	0.056	0.014
4302	GABFG	880906	1.08	1.03	525.0	4.66	29.6	10.7	-0.016	0.182	-0.081	0.039	-0.015	0.580	0.975	0.043	0.150	0.023	0.012	0.019
4303	GABFG	880920	1.07	1.01	525.0	4.50	39.0	15.9	-0.016	0.371	-0.081	0.040	-0.014	0.667	1.497	0.077	0.257	0.017	0.003	0.032
4325	GABFG	881018	1.03	1.00	400.0	4.28	61.4	25.9	0.018	0.206	-0.064	-0.033	-0.005	1.415	2.444	0.229	0.157	0.029	0.083	0.022
4326	GABFG	881025	1.08	0.99	550.0	4.15	81.7	34.6	0.019	0.134	-0.060	0.042	-0.005	1.621	3.436	0.246	0.068	0.025	0.146	0.015
4373	GABFG	881101	0.95	1.21	550.0	4.65	24.4	9.7	0.015	0.323	-0.010	-0.044	-0.044	0.534	0.987	0.092	0.181	0.022	0.062	0.025
4446	GABFG	881108	1.04	1.06	50.0	4.46	38.0	21.6	0.034	1.176	-0.014	0.022	-0.026	1.604	1.780	0.228	0.628	0.048	0.239	0.083
4447	GABFG	881115	1.03	1.15	525.0	4.58	27.8	14.1	0.014	0.540	-0.014	-0.018	-0.027	0.901	1.589	0.212	0.315	0.044	0.115	0.042
4459	GABFG	881122	1.00	1.16	500.0	4.62	24.2	13.4	0.008	0.780	-0.013	-0.017	-0.036	0.599	1.523	0.222	0.432	0.043	0.069	0.053

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GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
4457	GABFG	881206	1030	881213	1800	890102		2	0.09	152.0	33.0	4.00	3	
4458	GABFG	881213	1800	881220	1700	890102		1	0.16	291.0	21.9	4.32	3	
4479	GABFG	881220	1700	881227	1700	890119		1	0.05	89.0	21.0	4.39		33
4480	GABFG	881227	1700	890103	1630	890119		4	1.15	2147.0	13.3	4.54	3	33
3495	GADAW	880105	1045	880112	1000	880120	2.18	1	1.60	1794.0	8.1	4.81	3	
3538	GADAW	880112	930	880119	930	880128	0.20	4	1.85	3159.0	10.8	5.53	3	3199
3549	GADAW	880119	930	880126	930	880202	0.18	2	2.05	3520.0	11.7	5.63	3	31
3569	GADAW	880126	930	880202	900	880209		1	0.05	58.0			3	
3592	GADAW	880202	900	880209	900	880217	0.20	3	1.60	2713.0	18.3	4.45		
3612	GADAW	880209	900	880216	930	880222	0.20	1	0.20	372.0	25.3	4.67	3	
3660	GADAW	880216	930	880223	900	880307	0.20	1	0.25	408.0	21.6	4.41	3	
3680	GADAW	880301	900	880308	830	880317	0.26	2	0.25	390.0	10.5	5.20	3	
3685	GADAW	880308	830	880315	930	880321	0.21	3	1.25	2149.0	16.1	4.59	3	
3710	GADAW	880315	900	880322	900	880328	0.14	1	0.25	432.0	18.4	4.52	3	34
3730	GADAW	880322	900	880329	900	880404	0.19	1	0.65	1135.0	13.6	4.78	3	
3751	GADAW	880329	900	880405	900	880412	0.19	2	1.20	2077.0	16.0	4.70	3	3334
3779	GADAW	880405	900	880412	900	880421		3	1.95	3363.0	17.4	4.53	3	
3798	GADAW	880412	900	880419	900	880426		4	1.25	2151.0	16.8	4.57	3	
3816	GADAW	880419	900	880427	900	880429		3	1.20	2088.0	26.1	4.39	3	
3851	GADAW	880503	900	880510	930	880517	0.19	3	0.30	512.0	32.4	4.30	3	
3873	GADAW	880510	950	880517	900	880524	0.21	3	0.40	678.0	32.8	4.30	3	
3888	GADAW	880517	900	880524	930	880531	0.21	3	0.15	197.0	38.3	4.24	3	
3911	GADAW	880524	930	880531	900	880607	0.23	3	0.25	492.0	25.3	4.33	3	
3951	GADAW	880614	900	880621	900	880627	0.21	2	0.35	631.0	174.2	3.43	3	33
3974	GADAW	880621	915	880628	930	880706	0.21	1	0.15	251.0	102.0	3.83	3	
3986	GADAW	880628	930	880705	915	880711	0.21	4	1.35	2278.0	39.6	4.04	3	
4012	GADAW	880705	915	880712	900	880720	0.21	2	0.15	330.0	88.6	3.74	3	34
4022	GADAW	880712	915	880719	915	880725	0.22	1	0.45	768.0	49.7	4.05	3	
4044	GADAW	880719	915	880726	915	880801	0.22	3	4.45	7573.0	19.4	4.49	3	

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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4457	GABFG	881206	1.01	1.10	100.0	4.08	88.1	34.0	0.041	0.303	-0.012	-0.015	-0.035	2.495	2.355	0.117	0.056	0.030	0.118	0.016
4458	GABFG	881213	1.00	1.12	250.0	4.40	40.2	18.2	-0.006	0.347	-0.013	-0.016	-0.036	1.464	1.587	0.105	0.216	0.025	0.156	0.037
4479	GABFG	881220	1.05	1.06	40.0	4.46		21.9	0.035	0.866	-0.007	-0.013	-0.025	1.316	2.431	0.432	0.519	0.069	0.111	0.067
4480	GABFG	881227	1.01	1.24	475.0	4.60	28.5	10.7	0.011	0.248	-0.007	-0.013	-0.026	0.766	1.183	0.176	0.125	0.030	0.038	0.015
3495	GADAW	880105	0.92	1.16	550.0	4.83	18.0	6.0	-0.003	0.070	-0.039	0.015	-0.071	0.373	0.504	0.044	0.036	0.013	0.022	0.005
3538	GADAW	880112	9999	9999	550.0	5.61														
3549	GADAW	880119	0.61	1.13	550.0	6.08		12.1	-0.002	0.532	-0.005	0.751	-0.039	0.508	1.201	1.474	0.308	0.444	0.095	0.061
3569	GADAW	880126	1.02	1.02	50.0	4.79		35.5	0.037	4.573	-0.011	0.035	0.073	3.420	2.477	0.853	2.685	0.241	0.403	0.342
3592	GADAW	880202	1.04	1.10	550.0	4.43	38.5	17.3	0.010	0.364	-0.017	0.030	-0.078	0.778	1.788	0.201	0.156	0.012	0.039	0.024
3612	GADAW	880209	0.96	1.00	330.0	4.94	17.3	21.4	0.022	0.434	0.038	0.037	-0.156	2.390	3.287	1.603	0.210	0.081	0.248	0.040
3660	GADAW	880216	0.97	1.16	375.0	4.37	45.2	19.3	0.010	0.051	0.147	0.023	0.063	1.371	2.161	0.501	0.033	0.023	0.065	0.008
3680	GADAW	880301	0.91	0.98	350.0	5.36	15.3	9.4	0.013	0.266	0.174	0.025	-0.013	0.898	1.347	0.645	0.137	0.077	0.179	0.043
3685	GADAW	880308	1.00	1.09	550.0	4.60	30.0	13.8	0.010	0.174	0.017	0.026	-0.006	0.980	1.621	0.388	0.092	0.018	0.080	0.015
3710	GADAW	880315	0.98	1.15	400.0	4.47	38.6	14.9	0.012	0.069	-0.023	0.015	-0.020	0.857	1.750	0.179	0.018	0.041	0.157	0.013
3730	GADAW	880322	0.99	1.12	550.0	4.79	18.7	11.3	0.013	0.588	-0.019	-0.029	-0.017	0.776	1.341	0.317	0.340	0.041	0.094	0.049
3751	GADAW	880329	0.96	1.10	550.0	4.71	24.3	14.2	0.012	0.827	-0.015	-0.041	-0.026	1.090	1.472	0.382	0.494	0.056	0.120	0.067
3779	GADAW	880405	0.98	1.15	550.0	4.49	34.2	14.4	0.006	0.111	-0.004	0.024	-0.008	0.844	1.629	0.243	0.058	0.029	0.056	0.011
3798	GADAW	880412	1.00	1.14	550.0	4.56	31.3	14.2	0.013	0.101	-0.014	0.041	-0.005	1.052	1.809	0.370	0.041	0.065	0.132	0.022
3816	GADAW	880419	0.96	1.12	550.0	4.38	46.9	22.2	0.017	0.243	-0.009	0.037	-0.005	1.123	3.030	0.555	0.128	0.085	0.221	0.032
3851	GADAW	880503	1.01	1.10	475.0	4.27	56.1	28.6	0.022	0.635	-0.005	0.042	-0.003	1.697	3.274	0.513	0.363	0.080	0.208	0.061
3873	GADAW	880510	0.98	1.09	550.0	4.25	60.4	30.7	0.024	0.108	-0.006	0.027	-0.005	2.076	3.960	0.886	0.030	0.040	0.288	0.025
3888	GADAW	880517	1.00	1.09	150.0	4.20	69.1	33.9	0.031	0.738	-0.002	-0.033	-0.009	2.413	3.724	0.447	0.406	0.096	0.488	0.086
3911	GADAW	880524	0.99	1.08	450.0	4.29	56.9	24.5	0.020	0.269	-0.004	-0.044	-0.017	1.383	2.550	0.356	0.129	0.027	0.125	0.025
3951	GADAW	880614	1.03	1.11	550.0	3.43	393.1	156.5	0.108	0.582	-0.004	0.045	-0.001	6.326	17.656	1.433	0.083	0.103	0.405	0.050
3974	GADAW	880621	1.03	0.97	200.0	3.85	159.3	74.9	0.061	0.306	-0.008	-0.026	-0.002	4.513	7.232	0.942	0.044	0.085	0.571	0.051
3986	GADAW	880628	1.04	1.05	550.0	4.09	88.7	37.5	0.021	0.128	-0.003	0.019	-0.007	1.724	4.053	0.486	0.035	0.017	0.044	0.012
4012	GADAW	880705	1.03	1.04	300.0	3.72	196.0	86.9	0.054	0.440	-0.007	-0.014	-0.013	3.611	9.146	0.782	0.071	0.035	0.333	0.045
4022	GADAW	880712	1.01	1.01	550.0	4.03	105.7	47.3	0.031	0.230	-0.007	-0.026	-0.019	2.935	4.689	0.753	0.120	0.045	0.169	0.034
4044	GADAW	880719	1.04	1.07	550.0	4.47	39.2	16.5	0.009	0.069	-0.004	-0.076	-0.023	1.117	1.814	0.353	0.014	0.028	0.024	0.003

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GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
4083	GADAW	880726	915	880802	915	880809	0.22	2	0.30	470.0	51.7	4.02	13	
4092	GADAW	880802	915	880809	915	880812	0.22	4		2923.0	26.7	4.35	3	21
4112	GADAW	880809	915	880816	1330	880822	10.22	1		160.0	47.7	6.32	13	213499
4156	GADAW	880816	1330	880823	920	880901	0.21	2	1.00	1783.0	25.1	4.35	3	
4202	GADAW	880823	920	880830	915	880907	0.21	1	0.35	629.0	30.5	4.26		
4168	GADAW	880830	900	880906	900	880927	0.20	2	1.75	2955.0	10.0	4.77		
4221	GADAW	880906	900	880913	915	880922	0.21	4	3.70	6356.0	5.9	5.15		34
4244	GADAW	880913	915	880920	951	880927	0.22	2	1.40	2361.0	18.4	4.58		
4257	GADAW	880920	915	880927	900	881005		1	0.05	31.0			3	
4279	GADAW	880927	950	881004	915	881011	0.16	3	4.70	8053.0	7.6	4.88		
4314	GADAW	881018	1150	881025	915	881031	0.12	2	0.90	1477.0	31.6	4.21	3	34
4340	GADAW	881025	915	881101	915	881109	0.24	1	0.60	995.0	28.9	4.21	3	
4356	GADAW	881101	915	881108	900	881116	0.25	3	1.10	1879.0	14.5	4.62	3	
4357	GADAW	881108	900	881115	915	881116	0.25	2	0.20	346.0	54.2	4.02		34
4374	GADAW	881115	900	881122	900	881117	0.24	2	0.80	1402.0	14.0	4.75	3	
4424	GADAW	881122	900	881129	900	881206	0.20	1	0.90	1513.0	15.7	4.61	3	34
4436	GADAW	881129	900	881206	915	881215		1	0.05	57.0			3	
4481	GADAW	881220	900	881227	900	890119	0.17	2	0.75	1255.0	32.5	4.33		
4482	GADAW	881227	900	890103	930	890119	0.22	4	2.50	4178.0	13.3	4.63		
3511	GADUF	880105	950	880112	930	880121	2.20	1	1.20	1819.0	7.5	4.79	3	
3528	GADUF	880112	930	880119	1030	880126	0.20	3	0.85	1420.0	11.7	4.58		
3563	GADUF	880119	950	880126	1000	880204	0.21	2	0.80	1298.0	8.3	4.77	3	
3593	GADUF	880202	930	880209	1000	880217	0.18	2	2.25	3935.0	12.2	4.67		
3630	GADUF	880216	930	880223	945	880226	0.22	2	0.70	1115.0	10.5	4.68	3	3121
3865	GADUF	880510	915	880517	930	880520	0.21	2	0.50	908.0	39.0	4.09	3	
3905	GADUF	880524	915	880531	945	880604	0.22	1	0.44	751.0	11.6	4.69	3	
3927	GADUF	880531		880607		880613			0.13				3	99
3940	GADUF	880607	945	880614	945	880620	0.25	2	1.55	2621.0	26.8	4.12	3	3334
3947	GADUF	880614	945	880621	945	880623		1	0.10	188.0			3	

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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4083	GADAW	880726	1.07	0.99	450.0	3.99	111.7	50.1	0.036	0.173	-0.005	-0.019	-0.054	2.668	4.822	0.560	0.030	0.034	0.088	0.015
4092	GADAW	880802	1.02	1.05	550.0	4.31	55.5	25.0	0.021	0.104	-0.003	0.021	-0.041	1.773	2.636	0.600	0.029	0.022	0.042	0.011
4112	GADAW	880809	9999	9999	110.0	6.04														
4156	GADAW	880816	1.07	1.01	550.0	4.35	52.5	23.4	0.018	0.097	-0.004	0.027	-0.012	1.263	2.640	0.484	0.018	0.017	0.032	0.008
4202	GADAW	880823	1.00	1.08	550.0	4.21	66.4	28.2	0.020	0.177	-0.005	-0.034	-0.023	1.237	3.169	0.420	0.085	0.010	0.060	0.011
4168	GADAW	880830	1.00	1.19	550.0	4.70	24.2	8.4	0.006	0.097	-0.001	-0.052	-0.029	0.466	0.959	0.135	0.054	0.010	0.001	0.009
4221	GADAW	880906	1.00	1.26	550.0	5.12	12.1	4.6	0.005	0.121	-0.018	0.076	-0.019	0.339	0.668	0.255	0.064	0.027	-0.009	0.004
4244	GADAW	880913	1.06	1.15	550.0	4.51	32.7	15.6	0.007	0.167	-0.006	0.063	-0.020	1.027	2.001	0.489	0.067	-0.013	-0.025	0.008
4257	GADAW	880920	1.08	0.97	50.0	3.86		71.8	0.075	0.679	-0.005	0.042	-0.019	3.031	7.365	0.809	0.306	0.069	0.198	0.042
4279	GADAW	880927	0.97	1.13	550.0	4.83	18.4	6.8	0.003	0.101	-0.058	0.038	-0.011	0.316	0.731	0.134	0.057	0.006	-0.033	0.006
4314	GADAW	881018	1.03	1.01	550.0	4.27	60.2	26.9	0.022	0.128	-0.082	0.037	-0.011	1.635	2.627	0.364	0.080	0.022	0.111	0.019
4340	GADAW	881025	1.14	1.00	575.0	4.21	68.7	28.2	0.012	0.072	0.060	-0.033	-0.003	1.306	2.744	0.121	0.024	0.013	0.043	0.007
4356	GADAW	881101	0.94	1.14	579.0	4.60	28.6	12.5	0.015	0.283	-0.016	-0.051	-0.051	0.889	1.283	0.252	0.151	0.019	0.100	0.023
4357	GADAW	881108	0.99	1.05	300.0	3.98	115.5	53.1	0.044	1.036	-0.015	-0.050	-0.051	2.987	5.198	0.675	0.622	0.056	0.244	0.088
4374	GADAW	881115	0.98	1.08	575.0	4.72	23.7	13.5	0.012	0.629	-0.009	-0.043	-0.043	0.882	1.581	0.396	0.376	0.028	0.100	0.050
4424	GADAW	881122	0.98	1.15	575.0	4.56	30.2	13.7	0.013	0.440	-0.021	-0.055	-0.027	0.671	1.611	0.216	0.245	0.022	0.103	0.034
4436	GADAW	881129	1.04	1.30	42.0	4.07		39.3	0.100	1.484	-0.021	-0.345	-0.022	3.203	4.714	0.919	0.660	0.112	0.304	0.078
4481	GADAW	881220	1.01	1.11	550.0	4.22	62.7	30.8	0.023	0.901	-0.007	-0.013	-0.026	1.694	3.293	0.535	0.496	0.037	0.080	0.063
4482	GADAW	881227	1.03	1.23	550.0	4.60	29.8	10.5	0.011	0.102	-0.007	0.021	-0.027	0.516	1.385	0.214	0.032	0.008	0.027	0.002
3511	GADUF	880105	0.97	1.09	530.0	5.32	11.8	4.7	-0.001	0.288	-0.104	0.020	-0.185	0.229	0.664	0.150	0.149	0.241	0.013	0.010
3528	GADUF	880112	1.02	1.13	525.0	4.61	26.3	12.5	-0.003	0.593	-0.007	0.025	-0.049	0.645	1.200	0.140	0.333	0.026	0.022	0.041
3563	GADUF	880119	1.01	1.14	525.0	4.73	24.8	9.6	-0.001	0.509	-0.004	-0.043	-0.013	0.605	0.850	0.102	0.274	0.026	0.032	0.036
3593	GADUF	880202	1.07	1.12	525.0	4.73	20.7	9.2	0.005	0.321	-0.018	0.034	-0.081	0.436	0.962	0.128	0.142	0.010	0.023	0.022
3630	GADUF	880216	0.95	1.21	490.0	4.66	23.3	8.6	0.007	0.026	-0.012	0.035	-0.132	0.453	0.944	0.099	0.013	0.015	0.042	0.005
3865	GADUF	880510	1.02	1.12	525.0	4.04	91.4	38.8	0.026	0.257	-0.005	0.046	-0.005	2.167	3.925	0.380	0.107	0.057	0.136	0.001
3905	GADUF	880524	0.95	1.16	500.0	4.62	27.8	11.1	0.009	0.139	-0.004	-0.046	-0.019	0.915	1.110	0.196	0.075	0.025	0.094	0.015
3927	GADUF	880531	9999	9999	250.0	3.82														
3940	GADUF	880607	1.01	1.06	525.0	4.11	87.4	37.7	0.033	0.167	-0.003	0.022	-0.012	1.980	4.213	0.593	0.035	0.106	0.199	0.026
3947	GADUF	880614	0.98	1.01	180.0	4.01	103.9	49.5	0.049	0.420	-0.003	-0.014	-0.001	2.946	4.516	0.724	0.125	0.276	0.129	0.036

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GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3970	GADUF	880621	945	880628	945	880705	0.20	1	2.10	3604.0	45.5	3.93	3	3133
3983	GADUF	880628	930	880705	915	880708	0.27	1	0.57	1032.0	43.1	4.02	13	34
4013	GADUF	880705	915	880712	900	880720	0.22	1	0.20	340.0	11.4	4.70	3	
4045	GADUF	880719	930	880726	915	880801	0.23	1	0.58	1024.0	18.7	4.44	3	
4062	GADUF	880726	915	880802	930	880805	0.24	3	0.38	669.0	27.7	4.37	3	
4097	GADUF	880802	930	880809	1100	880815	0.24	5	1.60	2746.0	25.0	4.28	3	33
4132	GADUF	880809	1100	880816	915	880826	0.22	2	0.82	1375.0	11.8	4.67	3	33
4133	GADUF	880816	915	880823	930	880826	0.24	2	0.65	1133.0	17.8	4.45	3	
4198	GADUF	880823	920	880830	930	880902	0.22	1	0.55	976.0	4.1	5.39	3	
4169	GADUF	880830	930	880906	1000	880913	0.22	3	1.60	2696.0	4.1	5.19	3	
4222	GADUF	880906	1000	880913	1030	880922	0.24	1	2.50	4306.0	3.8	5.20	3	34
4274	GADUF	880927	1000	881004	900	881011	0.21	3	1.68	2800.0	9.1	4.86	3	31
4413	GADUF	881122	900	881129	1000	881206	0.21	2	0.45	784.0	13.4	4.74	3	34
4464	GADUF	881213	915	881220	1015	890102	0.21	1	0.25	434.0	12.8	4.49	3	33
4483	GADUF	881227	915	890103	1000	890119	0.22	3	1.29	2071.0	10.2	4.92		
3550	GAHIW	880105	930	880126	900	880202	2.00	8	5.13	7673.0	9.1	4.81	3	
3617	GAHIW	880126	900	880217	930	880223		11	1.98	3512.5	24.2	4.34		
3638	GAHIW	880217	930	880223	915	880229		1	0.15	254.0	23.8	4.31	3	
3696	GAHIW	880301		880315	930	880323		9	1.83	3028.0	17.1	4.48	3	
3711	GAHIW	880315		880322		880328	2.00	6	0.36	458.5	21.9	4.32	3	32
3752	GAHIW	880322	900	880405	1300	880412		4	2.65	4552.0	15.9	4.64	3	
3792	GAHIW	880405	1300	880419	1000	880425		5	4.67	8017.5	11.1	4.84		
3832	GAHIW	880428	900	880505	1100	880510		1	0.25	469.5	24.7	4.37	3	
3852	GAHIW	880505	900	880510	1040	880517		1	0.11	252.0	83.7	3.81	3	
3868	GAHIW	880510	1040	880517	1020	880523		1		82.5			3	
3922	GAHIW	880517	1020	880531	930	880608		6	0.83	1374.0	28.7	4.18	3	
3963	GAHIW	880614	1000	880621	900	880629		3	0.82	1441.5	5.8	3.88	3	
3966	GAHIW	880621	900	880628	900	880701		3	0.57	1026.0	54.9	3.97	3	
3990	GAHIW	880628	900	880706	1100	880712		5	0.93	1568.5	35.3	4.04	3	

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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3970	GADUF	880621	1.06	0.98	525.0	4.07	99.1	42.1	0.022	0.120	-0.009	-0.028	-0.001	1.515	4.529	0.523	0.023	0.039	-0.024	0.011
3983	GADUF	880628	1.05	0.99	540.0	4.04	105.9	43.2	0.027	0.145	-0.006	-0.019	-0.002	1.787	4.292	0.350	0.066	0.029	0.067	0.014
4013	GADUF	880705	1.00	1.11	290.0	4.76	23.2	7.6	0.005	0.086	-0.007	0.019	-0.013	0.670	0.541	0.064	0.044	0.021	0.027	0.012
4045	GADUF	880719	1.11	1.03	525.0	4.43	45.1	16.8	0.011	0.079	-0.004	-0.077	-0.023	1.259	1.297	0.115	0.026	0.012		0.004
4062	GADUF	880726	0.99	0.98	500.0	4.44	46.4	25.8	0.037	0.152	-0.002	-0.025	-0.040	2.495	2.808	0.978	0.063	0.042	0.198	0.026
4097	GADUF	880802	0.98	1.03	500.0	4.26	65.0	25.7	0.026	0.108	-0.003	-0.023	-0.034	1.365	2.437	0.324	0.038	0.024	0.057	0.011
4132	GADUF	880809	1.07	1.15	525.0	4.67	28.6	9.9	0.008	0.277	-0.003	0.038	-0.039	0.417	1.129	0.071	0.182	0.023	0.031	0.023
4133	GADUF	880816	1.05	1.11	510.0	4.40	44.6	15.7	0.009	0.060	-0.003	0.029	-0.038	1.043	1.211	0.041	0.015	0.005	-0.019	0.004
4198	GADUF	880823	0.87	1.25	550.0	5.58		3.3	0.008	0.139	-0.004	0.117	-0.022	0.332	0.398	0.268	0.066	0.102	0.026	0.010
4169	GADUF	880830	0.88	1.23	525.0	5.17	12.0	3.0	0.002	0.083		-0.053	-0.030	0.166	0.317	0.072	0.042	0.017	-0.015	0.003
4222	GADUF	880906	0.84	1.42	525.0	5.20	11.7	2.3	0.003	0.025	-0.017	-0.019	-0.019	0.235	0.252	0.079	0.021	0.009	-0.009	-0.002
4274	GADUF	880927	1.01	1.12	525.0	4.90	19.3	7.9	0.007	0.519	-0.055	0.041	-0.014	0.478	0.711	0.160	0.301	0.036	-0.033	0.039
4413	GADUF	881122	0.96	1.12	500.0	4.85	19.7	11.4	0.013	0.792	-0.010	-0.082	-0.035	0.683	1.335	0.353	0.465	0.096	0.060	0.061
4464	GADUF	881213	0.94	1.36	400.0	4.58	27.4	10.5	0.011	0.135	-0.016	-0.022	-0.039	1.268	1.076	0.288	0.054	0.025	0.082	0.015
4483	GADUF	881227	1.01	1.29	525.0	4.71	23.8	8.2	0.009	0.231	-0.007	-0.013	-0.027	0.538	0.989	0.146	0.124	0.028	0.024	0.017
3550	GAHIW	880105	1.05	1.23	550.0	4.76	21.6	7.1	-0.002	0.181	-0.005	0.027	-0.037	0.483	0.689	0.053	0.095	0.011	0.021	0.013
3617	GAHIW	880126	1.02	1.14	550.0	4.34	49.4	19.4	0.009	0.296	-0.017	0.040	-0.163	1.142	1.814	0.156	0.126	0.023	0.062	0.023
3638	GAHIW	880217	1.03	1.12	200.0	4.29	52.8	21.8	0.013	0.248	-0.009	0.062	-0.088	1.705	1.740	0.095	0.091	0.159	0.091	0.031
3696	GAHIW	880301	0.93	1.24	550.0	4.42	39.2	15.9	0.013	0.281	-0.007	0.027	-0.006	1.035	1.721	0.270	0.145	0.060	0.079	0.026
3711	GAHIW	880315	0.97	1.13	450.0	4.38	43.1	17.4	0.015	0.103	-0.023	-0.014	-0.020	1.254	1.509	0.110	0.019	0.037	0.135	0.012
3752	GAHIW	880322	0.97	1.12	550.0	4.60	32.5	14.9	0.013	0.882	-0.015	-0.041	-0.027	0.969	1.359	0.219	0.516	0.045	0.111	0.066
3792	GAHIW	880405	0.98	1.21	550.0	4.63	25.8	10.1	0.009	0.087	-0.015	0.039	-0.005	0.597	1.220	0.188	0.045	0.019	0.058	0.011
3832	GAHIW	880428	0.96	1.16	410.0	4.37	44.9	20.7	0.019	0.469	-0.008	0.034	-0.007	1.207	2.430	0.165	0.267	0.097	0.359	0.062
3852	GAHIW	880505	1.00	1.06	180.0	3.84	148.7	75.7	0.046	1.117	-0.005	-0.034	-0.004	3.781	8.798	1.222	0.525	0.231	0.612	0.108
3868	GAHIW	880510	1.04	1.05	70.0	3.95	119.7	71.6	0.088	0.436	-0.006	-0.027	-0.005	5.682	9.809	1.919	0.176	0.345	1.140	0.134
3922	GAHIW	880517	0.95	1.11	550.0	4.16	72.2	31.3	0.021	0.420	-0.002	-0.038	-0.013	1.799	3.087	0.293	0.252	0.085	0.195	0.049
3963	GAHIW	880614	1.04	0.96	550.0	3.88	147.8	66.7	0.040	0.182	-0.007	-0.025	-0.001	2.594	6.843	0.735	0.032	0.083	0.155	0.022
3966	GAHIW	880621	1.03	1.00	550.0	3.96	124.7	53.1	0.038	0.176	-0.007	-0.026	-0.001	2.291	5.400	0.466	0.030	0.054	0.237	0.033
3990	GAHIW	880628	1.03	1.03	550.0	4.11	89.2	35.3	0.019	0.151	-0.010	-0.009	-0.028	1.546	3.566	0.355	0.043	0.016	0.037	0.009

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GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
4046	GAHIW	880706	1100	880726	930	880801		11	5.06	9254.0	20.8	4.34	3	34
4065	GAHIW	880726	930	880803	1100	880808		4	0.46	755.5	46.6	4.05	3	
4098	GAHIW	880803	1100	880809	930	880815		3	1.22	2056.0	23.8	4.27	3	34
4113	GAHIW	880809	930	880816	1030	880822		3	1.58	2711.5	18.0	4.37	3	
4203	GAHIW	880816	1030	880830	1100	880907		3	1.64	3092.5	30.7	4.13	4	34
4223	GAHIW	880830	1100	880913	930	880922		5	4.04	6812.0	7.5	4.86		
4245	GAHIW	880913	930	880920	1030	880927				3003.0		4.67	3	
4304	GAHIW	880920	930	881004	930	881020		2	5.55	7817.0		4.87	3	
4327	GAHIW	881018	930	881101	900	881109		5	0.72	1468.5			3	
4426	GAHIW	881101	900	881129	1000	881206		6	4.86	9228.0		4.38		
4485	GAHIW	881129	1000	890110	900	890119		1	4.90	8448.3		4.62		
3515	GASUM	880105	900	880112	900	880122	1.00	1	1.08	1430.7	11.0	4.60	3	21
3521	GASUM	880112	900	880119	900	880125		4	1.79	3067.6	30.7	4.27	3	
3551	GASUM	880119	900	880126	900	880202		4	2.60	4499.0	21.9	4.48	3	
3581	GASUM	880126	900	880202	1300	880210		2	0.74	1203.8	15.8	4.85		
3608	GASUM	880202	1300	880209	1245	880219		3	0.37	684.1	23.5	4.48		
3631	GASUM	880209	1245	880216	1800	880226		2	0.53	939.9	20.2	4.44		
3663	GASUM	880216	1800	880223	900	880309		2	0.13	228.6	41.7	4.05	3	
3760	GASUM	880301	1130	880308	900	880415		2	0.53	936.0	18.3	4.57		34
3748	GASUM	880308	900	880322	900	880411		4	1.30	2384.1	23.7	4.48	3	
3749	GASUM	880322	900	880330	1515	880411		2	0.61	1151.4	31.5	4.36	3	
3761	GASUM	880330	1515	880405	1115	880415		3	0.62	1078.0	61.0	3.90	3	
3789	GASUM	880405	1115	880412	900	880422		3	1.95	3333.0	24.9	4.22	3	33
3839	GASUM	880412	900	880419	930	880511		2	1.31	2233.0	18.0	4.63	3	
3840	GASUM	880419	930	880427	1300	880511		2	0.35	706.6	46.3	4.26	3	
3854	GASUM	880503	1145	880510	900	880517		3	0.47	926.9	52.0	4.03	3	
3869	GASUM	880510	900	880517	900	880523		1	0.18	352.7	35.4	4.12	3	
3907	GASUM	880517	900	880524	915	880606		3	0.73	1224.5	21.1	4.49	3	
3908	GASUM	880524	915	880531	900	880606		2	0.04	155.9	27.7	4.28	3	

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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4046	GAHIW	880706	1.04	1.05	550.0	4.42	46.5	18.9	0.013	0.085	-0.004	-0.079	-0.023	1.099	2.109	0.351	0.031	0.020	0.055	0.009
4065	GAHIW	880726	1.00	1.02	550.0	4.14	83.6	37.6	0.045	0.141	-0.015	-0.033	-0.030	2.049	4.055	0.790	0.027	0.035	0.102	0.013
4098	GAHIW	880803	1.04	1.06	550.0	4.25	62.4	24.9	0.015	0.109	-0.003	0.033	-0.033	1.355	2.364	0.190	0.038	0.015	0.068	0.013
4113	GAHIW	880809	0.99	1.08	550.0	4.41	45.0	18.1	0.017	0.106	-0.004	0.043	-0.021	1.077	1.794	0.311	0.042	0.016	0.034	0.008
4203	GAHIW	880816	0.92	1.16	550.0	4.13	72.2	28.5	0.021	0.091	-0.005	-0.035	-0.024	1.081	2.908	0.191	0.018	0.009	0.066	0.005
4223	GAHIW	880830	1.05	1.26	550.0	4.79	19.3	5.8	0.004	0.049	-0.017	0.059	-0.019	0.318	0.549	0.026	0.030	0.006	-0.009	0.002
4245	GAHIW	880913	1.08	1.23	550.0	4.64	24.8	8.3	0.005	0.047	-0.006	0.048	-0.020	0.462	0.802	0.030	0.016	-0.013	-0.025	0.002
4304	GAHIW	880920	1.20	1.13	550.0	4.81	22.2	6.3	-0.016	0.055	-0.081	0.036	-0.014	0.312	0.658	0.029	0.022	-0.009	-0.009	-0.002
4327	GAHIW	881018	1.10	1.03	550.0	4.41	46.4	19.2	0.018	0.089	-0.058	0.040	-0.005	1.274	1.894	0.220	0.053	0.029	0.089	0.007
4426	GAHIW	881101	1.01	1.14	575.0	4.50	37.3	15.2	0.016	0.507	-0.025	-0.045	-0.025	0.861	1.532	0.183	0.277	0.027	0.063	0.038
4485	GAHIW	881129	0.94	1.37	550.0	4.49	32.8	11.4	0.010	0.227	-0.007	0.020	-0.028	0.587	1.353	0.122	0.128	0.019	0 037	0.013
3515	GASUM	880105	0.93	1.37	540.0	4.75	19.1	6.0	-0.002	0.042	-0.008	0.024	-0.029	0.750	0.400	0.055	0.017	0.006	0.042	0.004
3521	GASUM	880112	1.03	1.07	550.0	4.19	66.4	28.1	0.017	0.532	-0.007	0.024	0.213	0.824	2.662	0.115	0.225	0.023	0.049	0.030
3551	GASUM	880119	1.03	1.20	550.0	4.54	32.4	12.4	0.009	0.346	-0.005	0.030	-0.036	0.441	1.448	0.103	0.190	0.021	0.042	0.024
3581	GASUM	880126	0.99	1.17	525.0	4.96	13.6	7.2	-0.002	0.713	-0.021	-0.008	-0.008	0.303	0.698	0.089	0.417	0.023	0.024	0.053
3608	GASUM	880202	1.02	1.17	550.0	4.50	33.7	12.9	0.009	0.138	-0.018	0.045	-0.148	0.758	1.274	0.127	0.050	0.010	0.038	0.009
3631	GASUM	880209	1.00	1.16	515.0	4.41	42.3	16.3	0.012	0.241	-0.011	0.033	-0.127	1.125	1.470	0.154	0.118	0.017	0.065	0.019
3663	GASUM	880216	0.98	1.09	160.0	4.04	91.6	39.9	0.029	0.361	-0.004	0.017	0.028	2.219	3.607	0.419	0.056	0.025	0.167	0.012
3760	GASUM	880301	0.94	1.21	525.0	4.63	26.6	10.8	0.004	0.165	-0.009	0.029	-0.012	0.602	1.391	0.266	0.102	0.023	0.062	0.018
3748	GASUM	880308	0.99	1.12	550.0	4.45	38.1	16.2	0.013	0.205	-0.012	-0.043	-0.022	0.835	1.784	0.190	0.108	0.015	0.105	0.017
3749	GASUM	880322	1.01	1.08	550.0	4.36	47.6	22.3	0.015	0.625	-0.013	-0.042	-0.023	0.948	2.444	0.232	0.383	0.042	0.111	0.053
3761	GASUM	880330	0.99	1.09	550.0	3.92	113.2	58.8	0.035	1.750	-0.009	0.030	-0.012	2.864	5.657	0.504	0.967	0.061	0.319	0.131
3789	GASUM	880405	1.92	0.61	525.0	4.83	20.5	16.0	0.006	0.064	-0.002	-0.037	-0.005	0.844	1.667	0.141	0.022	0.024	0.033	0.007
3839	GASUM	880412	0.94	1.12	550.0	4.87	18.7	9.5	-0.009	0.126	-0.007	0.072	-0.009	0.868	1.280	0.379	0.063	0.066	0.183	0.016
3840	GASUM	880419	0.97	1.10	550.0	4.20	63.7	42.5	0.037	0.478	-0.006	0.051	-0.009	2.931	6.499	1.559	0.309	0.173	0.647	0.081
3854	GASUM	880503	1.01	1.06	400.0	4.02	94.2	53.0	0.031	1.282	-0.005	0.040	-0.004	3.290	5.716	0.822	0.792	0.088	0.444	0.128
3869	GASUM	880510	0.99	1.10	300.0	4.35	48.4	25.4	0.029	0.117	-0.006	0.088	-0.005	2.407	2.952	0.773	0.022	0.029	0.354	0.025
3907	GASUM	880517	0.98	1.09	525.0	4.53	33.2	15.2	0.006	0.241	-0.004	-0.045	-0.018	1.196	1.524	0.258	0.124	0.037	0.149	0.026
3908	GASUM	880524	0.95	1.12	120.0	4.28	57.9	24.4	0.026	0.087	-0.004	-0.045	-0.018	1.673	2.636	0.563	0.031	0.015	0.086	0.008

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4066	GASUM	880614	900	880621	845	880808		2	0.12	283.7	10.8	3.54	3	
4067	GASUM	880628	845	880705	1130	880808		4	0.96	1713.7		3.82	3	
4068	GASUM	880705	1130	880712	845	880808		2	0.09	163.6		3.87	3	
4069	GASUM	880712	845	880719	900	880808		4	2.32	4143.1		3.98	3	
4070	GASUM	880719	900	880726	900	880808		2	0.89	1610.0		4.20	3	34
4139	GASUM	880802	900	880816	900	880829		6	0.92	1609.9		3.65	13	
4143	GASUM	880816	900	880823	900	880829		4	1.27	2302.9		3.93	3	
4199	GASUM	880823	900	880830	1415	880902		4	0.63	1183.2		3.67	3	
4224	GASUM	880830		880906		880922			1.92					
4259	GASUM	880906	900	880913	845	881005		5	3.34	5701.2	22.3			
4258	GASUM	880913	845	880920	915	881005		2	1.99	3405.0	25.4		3	
4305	GASUM	880927	830	881004	900	881018		2	1.14	1845.2	14.3			
4341	GASUM	881018	900	881025	915	881109		3	0.79	1310.7	31.6	4.34	3	
4350	GASUM	881025	915	881101	900	881109		2	0.50	863.1	40.7	4.17	3	
4358	GASUM	881101	900	881108	900	881116		4	2.08	3561.7	25.1	4.33	3	
4392	GASUM	881108	900	881115	900	881117		4	0.68	1101.1	33.3	4.30	3	
4378	GASUM	881115	900	881122	900	881117		4	2.31	4086.5	16.6	4.57	3	
4425	GASUM	881122	900	881129	900	881206		2	1.25		8.7	4.98		
4487	GASUM	881220	900	881227	900	890119		4	0.66	1115.1	30.2	4.30		
4488	GASUM	881227	900	890103	930	890119		4	2.63	4590.6	14.6	4.54		
3516	GAWAY	880105	900	880112	900	880122		3	1.26	2080.0	10.6	4.66	3	33
3532	GAWAY	880112	900	880119	900	880127		2	0.65	1098.0	29.5	4.26	3	313299
3552	GAWAY	880119	900	880126	830	880202		3	3.22	5539.0	7.1	4.98	3	31
3594	GAWAY	880202	930	880209	900	880217		4	0.81	1392.0	15.5	4.60	3	
3632	GAWAY	880209	900	880216	900	880226		1	0.25	466.0	14.3	4.82	3	
3639	GAWAY	880216	900	880223	830	880229		3	5.94	10748	8.1	4.63		33
3671	GAWAY	880301	900	880308	930	880315		2	1.20	2072.0	13.7	4.77	3	
3727	GAWAY	880308	930	880315	900	880402		3	0.50	802.0	13.3	4.44	3	33
3728	GAWAY	880315	900	880322	800	880402		2	0.10	222.0			3	

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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4066	GASUM	880614	1.08	0.95	215.0	3.63	270.9	118.1	0.072	0.317	-0.002	-0.017	-0.053	4.945	11.701	0.999	0.065	0.129	0.282	0.038
4067	GASUM	880628	1.03	0.97	550.0	3.95	125.7	55.5	0.028	0.362	-0.014	-0.032	-0.033	2.195	5.406	0.515	0.169	0.030	0.089	0.027
4068	GASUM	880705	1.08	0.98	85.0	4.03	104.9	45.9	0.037	0.418	-0.014	-0.031	-0.034	1.430	4.737	0.272	0.126	0.034	0.178	0.029
4069	GASUM	880712	1.02	1.01	550.0	4.14	82.6	35.1	0.023	0.349	-0.013	-0.031	-0.035	1.863	3.260	0.221	0.208	0.026	0.182	0.043
4070	GASUM	880719	1.04	1.06	550.0	4.39	44.9	17.6	0.014	0.069	-0.013	-0.030	-0.036	1.377	1.307	0.087	0.018	0.022	0.041	0.018
4139	GASUM	880802	1.06	1.01	520.0	3.86	150.2	64.0	0.038	0.282	-0.004	0.022	-0.031	3.017	6.050	0.385	0.076	0.036	0.184	0.029
4143	GASUM	880816	0.97	1.06	525.0	4.19	71.5	29.0	0.020	0.097	-0.004	0.019	-0.027	1.474	2.837	0.330	0.035	0.012	0.102	0.011
4199	GASUM	880823	1.00	1.05	525.0	3.94	116.9	51.4	0.039	0.143	-0.004	-0.032	-0.022	2.436	5.089	0.488	0.032	0.015	0.151	0.012
4224	GASUM	880830	1.07	1.19	550.0	4.67	22.6	8.4	0.005	0.071	-0.017	0.052	-0.020	0.453	0.871	0.070	0.038	0.010	-0.023	0.004
4259	GASUM	880906	1.04	1.15	550.0	4.27	53.5	21.2	0.011	0.298	-0.005	0.041	-0.018	0.470	2.358	0.074	0.132	0.001	-0.024	0.017
4258	GASUM	880913	1.01	1.15	550.0	4.25	56.4	22.7	0.009	0.156	-0.005	0.050	-0.018	0.814	2.542	0.234	0.046	0.020	-0.024	0.006
4305	GASUM	880927	1.11	1.02	550.0	4.61	26.8	12.2	-0.016	0.181	-0.081	0.059	-0.014	0.534	1.247	0.058	0.178	0.011	-0.009	0.023
4341	GASUM	881018	1.09	1.00	575.0	4.12	82.4	35.2	0.015	0.121	-0.025	0.035	-0.003	1.881	3.196	0.211	0.045	0.016	0.067	0.011
4350	GASUM	881025	1.02	1.01	550.0	4.27	60.6	28.0	0.018	0.212	-0.004	-0.030	-0.008	1.775	2.806	0.424	0.080	0.052	0.171	0.021
4358	GASUM	881101	0.99	1.12	550.0	4.33	50.2	21.6	0.009	0.445	-0.015	-0.050	-0.051	0.938	2.376	0.212	0.231	0.029	0.134	0.035
4392	GASUM	881108	0.96	1.11	550.0	4.17	69.5	30.1	0.024	0.438	-0.023	-0.088	-0.025	1.757	2.768	0.304	0.275	0.026	0.079	0.040
4378	GASUM	881115	0.99	1.15	525.0	4.50	35.4	14.4	0.014	0.454	-0.013	-0.057	-0.035	0.548	1.584	0.122	0.270	0.016	0.051	0.036
4425	GASUM	881122	0.96	1.19	525.0	5.04	14.4	6.0	0.011	0.393	-0.022	-0.052	-0.026	0.335	0.779	0.074	0.227	0.030	0.156	0.035
4487	GASUM	881220	0.94	1.21	500.0	4.25	50.9	24.6	0.022	0.735	-0.007	-0.013	-0.029	1.612	2.395	0.288	0.480	0.039	0.098	0.061
4488	GASUM	881227	0.85	1.35	550.0	4.46	34.8	11.5	0.011	0.104	-0.007	-0.013	-0.030	0.402	1.338	0.094	0.055	0.009	0.032	0.006
3516	GAWAY	880105	1.03	1.35	475.0	4.68	23.4	7.1	-0.002	0.081	-0.008	0.029	-0.030	0.362	0.845	0.054	0.035	0.009	-0.009	0.006
3532	GAWAY	880112	9999	9999	475.0	4.28														
3552	GAWAY	880119	0.84	1.23	520.0	5.01	15.4	4.9	-0.002	0.264	-0.005	0.025	-0.035	0.220	0.460	0.034	0.161	0.153	0.022	0.024
3594	GAWAY	880202	1.09	1.10	500.0	4.54	34.3	12.6	0.006	0.136	-0.013	0.034	-0.087	0.637	1.265	0.072	0.065	0.009	0.039	0.010
3632	GAWAY	880209	1.01	1.06	425.0	4.81	20.5	12.9	0.013	1.161	-0.011	0.047	-0.123	0.763	1.077	0.144	0.667	0.075	0.147	0.090
3639	GAWAY	880216	1.02	1.23	500.0	4.94	16.6	5.1	0.009	0.113	-0.009	0.042	-0.084	0.304	0.603	0.076	0.060	0.018	0.050	0.010
3671	GAWAY	880301	1.01	1.07	500.0	4.80	21.5	12.5	0.011	0.810	-0.005	0.021	-0.013	0.896	1.298	0.244	0.427	0.057	0.208	0.064
3727	GAWAY	880308	1.03	1.08	500.0	4.91	19.7	11.5	0.011	0.422	-0.021	0.094	-0.017	1.269	1.371	0.493	0.276	0.080	0.118	0.042
3728	GAWAY	880315	1.09	1.13	220.0	4.76	19.4	19.0	0.014	0.650	-0.020	0.647	-0.017	1.706	2.688	0.878	0.351	0.304	0.371	0.066

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GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3762	GAWAY	880322	800	880329	830	880415		2	0.72	1355.0	29.0	4.43	3	
3763	GAWAY	880329	830	880405	815	880415		2	0.10	152.0			3	
3807	GAWAY	880405	815	880412	800	880428		2	0.30	658.0	31.1	4.24	3	
3808	GAWAY	880412	800	880419	1100	880428		4	1.24	2000.0	17.8	4.67	3	33
3841	GAWAY	880419	1100	880426	830	880511		1	3.90	6727.0	11.0	5.30		
3833	GAWAY	880426	830	880503	1000	880510		2	1.10	1758.0	8.4	4.79	3	
3889	GAWAY	880510	900	880517	900	880531		4	0.32	462.0	14.4	4.74	3	
3890	GAWAY	880517	900	880524	930	880531		1	0.30	511.0	42.1	4.12	3	
3912	GAWAY	880524	930	880531	900	880607		2	0.70	1255.0	11.4	4.81		
3934	GAWAY	880531	900	880607	930	880616		2	0.45	772.0	28.3	4.39	3	
3943	GAWAY	880607	930	880614	830	880622		2	1.32	2212.0	9.1	4.75	3	
4008	GAWAY	880621	900	880628	900	880719		2	0.23	385.0	94.7	3.63	3	
4014	GAWAY	880705	900	880712	900	880720		1	1.96	3398.0	5.0	4.94	3	
4084	GAWAY	880726	900	880802	900	880809		4	0.68	1281.0	22.1	4.43	3	
4171	GAWAY	880830	900	880906	900	880913	0.56	6	3.55	6397.0	5.9	4.93	3	
4246	GAWAY	880913	830	880920	930	880927	0.46	1	0.80	1388.0	21.4	4.49		
4275	GAWAY	880927	900	881004	900	881011	0.55	5	2.70	4612.0	10.1	4.85		
4359	GAWAY	881101	930	881108	900	881116	0.43	3	2.84	4951.0	6.0	4.95	3	
4414	GAWAY	881122	830	881129	900	881206	0.42	4	0.71	1076.0	13.9	4.65		
4448	GAWAY	881206	900	881213	830	881219	0.43	2	0.95	1651.0	18.2	4.40	3	
4486	GAWAY	881227	900	890103	900	890119	0.44	1	0.15	310.0	9.7	4.89		

EPA State Operated Rain Network
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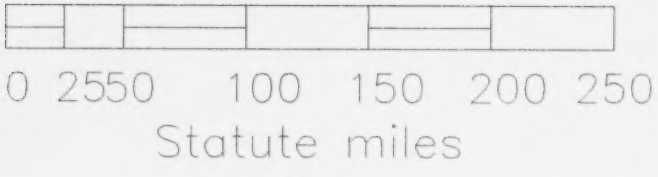
GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3762	GAWAY	880322	1.01	1.06	490.0	4.46	37.9	28.1	0.014	2.479	-0.008	0.048	-0.011	1.917	2.253	0.301	1.471	0.110	0.284	0.192
3763	GAWAY	880329	1.01	1.03	150.0	4.12	76.6	63.3	0.034	5.864	-0.008	0.039	-0.011	3.690	5.011	0.505	3.537	0.214	0.599	0.444
3807	GAWAY	880405	1.01	1.09	500.0	4.26	58.1	28.6	0.021	0.512	-0.012	0.036	-0.004	1.574	3.306	0.452	0.267	0.043	0.281	0.049
3808	GAWAY	880412	0.97	1.09	525.0	4.73	23.1	15.6	0.014	0.771	-0.011	0.041	-0.004	1.193	1.910	0.567	0.453	0.100	0.155	0.065
3841	GAWAY	880419	0.83	0.98	450.0	5.54		10.5	-0.009	0.683	-0.006	0.049	-0.009	0.944	1.220	0.672	0.364	0.123	0.200	0.059
3833	GAWAY	880426	0.99	1.29	500.0	4.87	17.0	6.6	0.013	0.073	-0.007	0.077	-0.007	0.714	0.798	0.246	0.035	0.045	0.053	0.015
3889	GAWAY	880510	1.01	1.08	450.0	4.70	21.8	13.4	0.030	0.617	-0.002	-0.033	-0.009	1.276	1.221	0.200	0.345	0.032	0.262	0.054
3890	GAWAY	880517	0.96	1.08	440.0	4.06	89.4	40.2	0.031	0.151	-0.002	-0.034	-0.008	1.752	4.527	0.621	0.051	0.029	0.167	0.027
3912	GAWAY	880524	0.99	1.18	525.0	4.70	23.6	10.0	0.018	0.399	-0.003	-0.043	-0.016	0.742	0.951	0.173	0.214	0.027	0.050	0.030
3934	GAWAY	880531	1.02	1.06	525.0	4.44	41.5	20.8	0.019	0.542	-0.004	0.039	-0.019	1.952	1.808	0.269	0.373	0.073	0.257	0.037
3943	GAWAY	880607	1.02	1.16	480.0	4.74	24.0	7.6	0.012	0.100	-0.002	0.019	-0.009	0.557	0.658	0.095	0.043	0.012	-0.014	0.009
4008	GAWAY	880621	1.02	0.99	350.0	3.70	211.3	96.9	0.048	0.341	-0.007	-0.011	-0.011	5.352	8.718	0.891	0.090	0.102	0.355	0.043
4014	GAWAY	880705	1.08	1.34	525.0	5.10	14.5	2.7	0.010	0.054	-0.007	0.036	-0.015	0.143	0.228	-0.004	0.028	-0.004	-0.015	0.004
4084	GAWAY	880726	1.07	1.04	520.0	4.38	48.2	18.4	0.014	0.156	-0.002	0.022	-0.052	1.473	1.206	0.100	0.070	0.011	-0.028	0.014
4171	GAWAY	880830	0.94	1.21	500.0	4.92	14.6	4.9	-0.001	0.202		-0.053	-0.031	0.285	0.378	0.030	0.106	0.008	-0.016	0.011
4246	GAWAY	880913	0.95	1.12	525.0	4.44	36.2	19.8	0.010	1.117	-0.006	0.046	-0.020	0.697	1.912	0.293	0.629	0.032	0.048	0.080
4275	GAWAY	880927	1.06	1.12	525.0	4.84	20.4	8.3	0.003	0.764	-0.056	0.037	-0.014	0.290	0.598	0.035	0.386	0.020	-0.033	0.051
4359	GAWAY	881101	0.89	1.34	525.0	4.99	13.6	3.6	0.009	0.088	-0.015	-0.049	-0.050	0.159	0.374	0.037	0.059	0.005	-0.006	-0.005
4414	GAWAY	881122	0.97	1.17	525.0	4.63	28.7	12.1	0.014	0.756	-0.009	-0.084	-0.035	0.570	1.111	0.110	0.429	0.025	0.060	0.054
4448	GAWAY	881206	1.10	1.23	525.0	4.44	35.9	13.3	-0.007	0.077	-0.006	0.036	-0.022	0.445	1.631	0.045	0.025	0.007	0.014	-0.003
4486	GAWAY	881227	0.96	1.33	250.0	4.97	15.6	6.2	0.011	0.573	-0.007	0.021	-0.029	0.463	0.644	0.115	0.352	0.027	0.069	0.042

Kentucky



□ Major city (for reference)
* EPA Acid Rain Site

KENTUCKY

SITE	SITE NAME	NEAREST CITY	COUNTY	SAMPLING PERIOD[1] BEGIN	END	#SAMPLES	%NON-VOID[2]
KYGRA	Grayson Lake	Grayson	Carter			45	97.8
KYMAM	Mammoth Cave	Brownsville	Edmonson			39	100.0

(1) "BEGIN" was JAN 88 and "END" was DEC 88 unless otherwise noted. For sites which were not operational during 1988, the date range of operation is given.

(2) Percentage of samples received which were not voided by GGC due to contamination.

Figure 2-1 (continued)
Site: KYGRA
Data Plots, Jan 1988 - Dec 1988

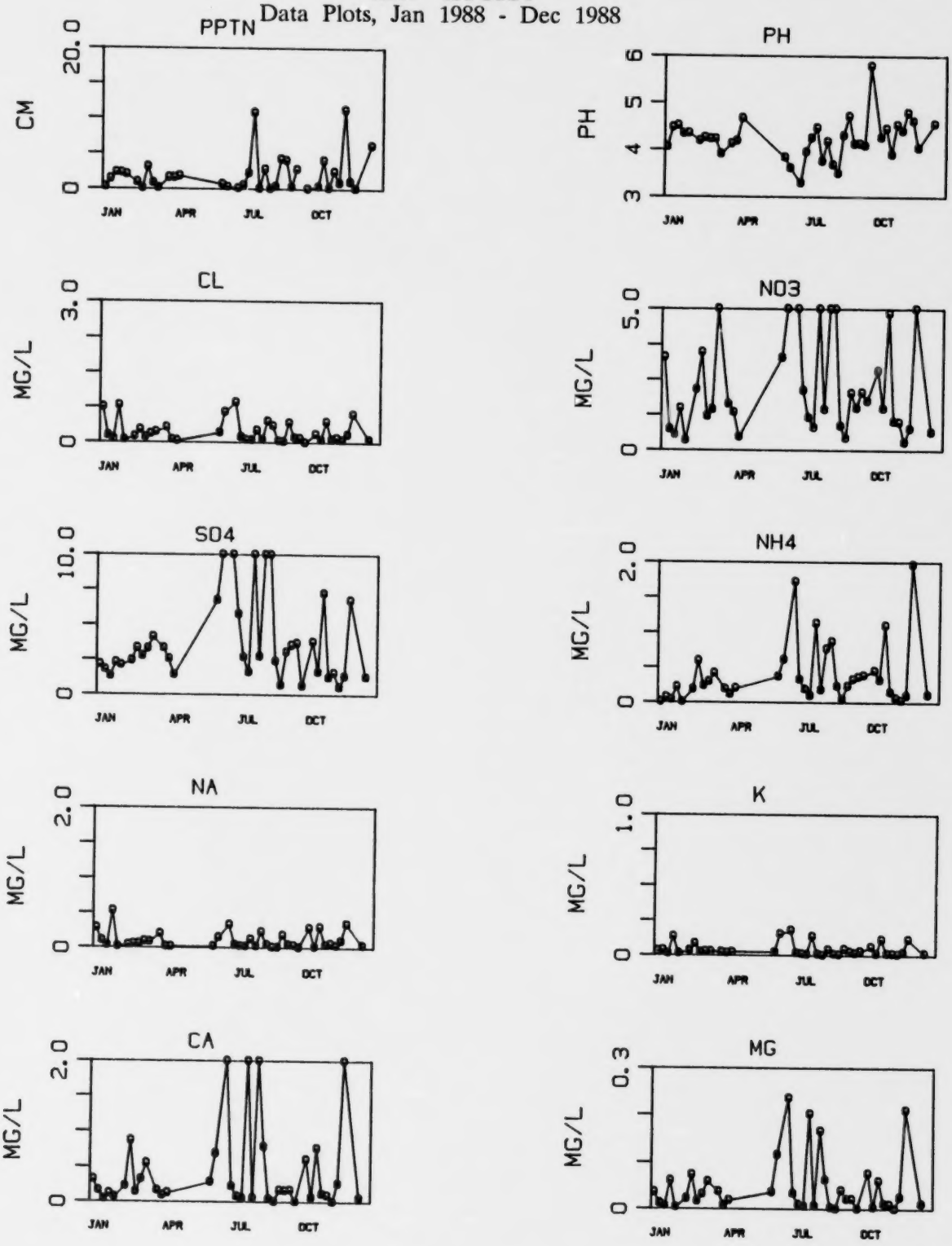
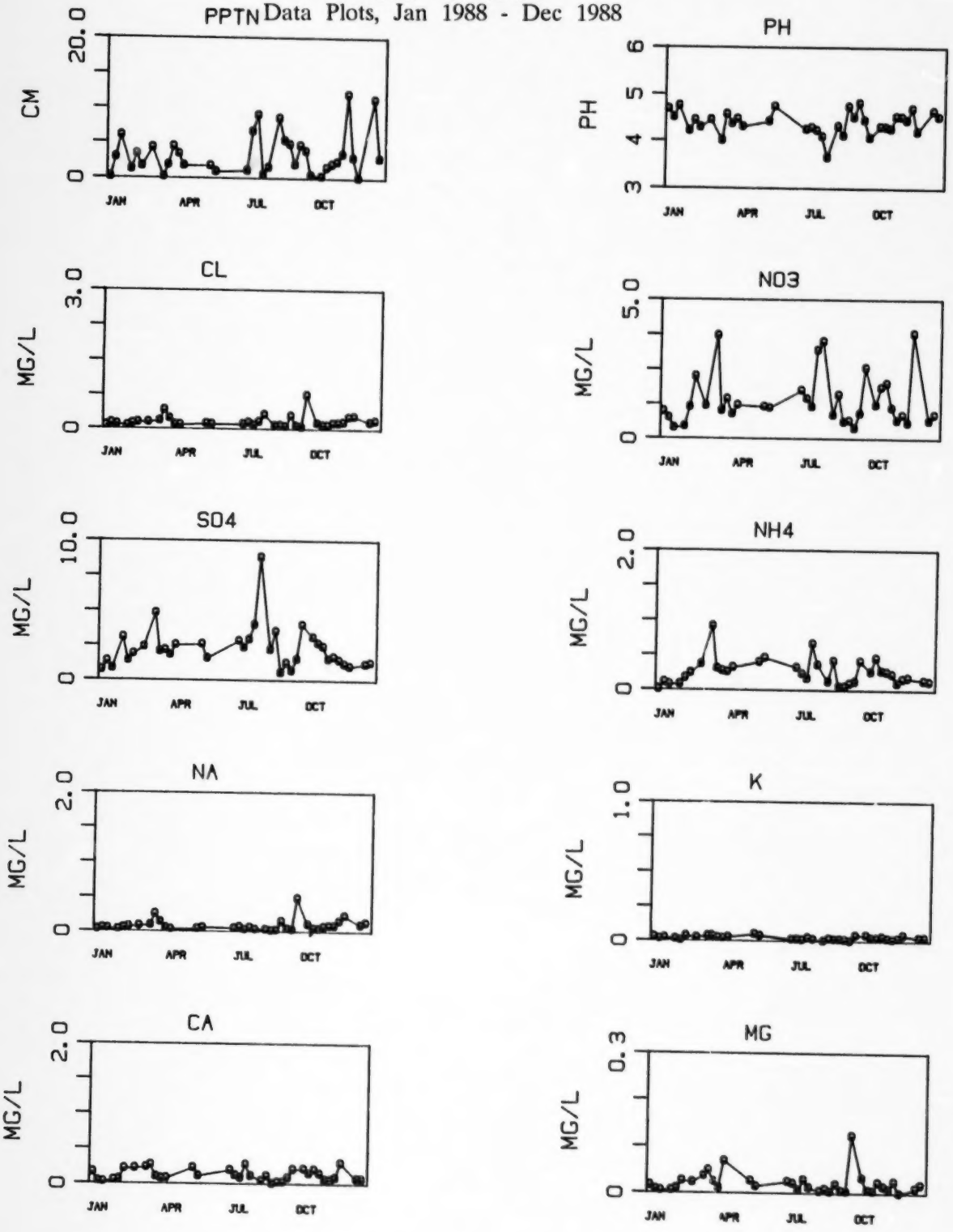


Figure 2-1 (continued)
Site: KYMAM
PPTN Data Plots, Jan 1988 - Dec 1988



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EPA State Operated Rain Network
1988 Sampling and Field Data

GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3496	KYGRA	880105	930	880112	1345	880120	0.40			144.0	42.3	4.07	3	
3529	KYGRA	880112	1345	880119	955	880126	0.40	3	0.54	1048.0	16.8	4.47	3	
3553	KYGRA	880119	950	880126	830	880202	0.40	1	0.89	1758.1	15.4	4.60	3	
3570	KYGRA	880126	840	880202	910	880209	0.40	3	0.86	1493.0	26.8	4.35	3	
3595	KYGRA	880202	915	880209	835	880217	0.40	3	0.77	1331.1	17.2	4.47	3	
3633	KYGRA	880209	840	880216	945	880226	1.40	1	0.02	108.0			3	3399
3650	KYGRA	880216	945	880223	800	880302		2	0.35	752.0	28.1	4.23	3	
3666	KYGRA	880223	815	880301	1040	880311	0.40	1	0.02	117.0			3	
3681	KYGRA	880301	1040	880308	810	880317	0.40	2	1.22	2888.0	29.8	4.25	3	
3697	KYGRA	880308	815	880315	930	880323	0.40	2	0.32	636.0	30.9	4.24	3	
3719	KYGRA	880315	930	880322	930	880329	1.40	1	0.04	171.0	57.0	4.95	3	
3738	KYGRA	880322	930	880329	945	880406	0.40	2	0.37	615.0	22.9	4.60	3	3233
3781	KYGRA	880329	945	880405	1030	880421	0.40	5	0.62	981.0	37.2	4.18	3	
3782	KYGRA	880405	1030	880412	1440	880422	0.40	2	0.61	1504.0	28.9	4.30	3	33
3793	KYGRA	880412	1440	880419	1340	880425	0.40	1	0.70	1292.0	13.9	4.60	3	
3821	KYGRA	880419	1340	880426	1010	880503	0.40	2	0.73	1256.0	67.7	3.93	3	313233
3853	KYGRA	880503	1000	880510	1000	880517	0.40	3	0.98	1748.0	40.6	4.06	3	3132
3874	KYGRA	880510	1000	880517	1315	880524	0.40	2	0.25	441.0	116.0	3.63	3	313234
3886	KYGRA	880517	1320	880524	815	880531	0.40	2	0.43	682.0	36.6	4.12	3	3132
3913	KYGRA	880524	820	880531	1415	880607	0.40	2	0.72	1040.0	26.7	4.24	3	313234
3960	KYGRA	880607	940	880614	810	880628	0.40	1	0.26	480.0	63.2	3.83	3	
3961	KYGRA	880614	815	880621	1235	880628	0.40	1	0.12	128.0			3	
3995	KYGRA	880628	1030	880705	1500	880714	0.40	2	0.03	59.0			3	
4023	KYGRA	880705	1500	880712	930	880725	0.40	1	0.21	387.0	49.7	3.93	3	
4038	KYGRA	880712	930	880719	835	880729		4	0.86	1499.0	26.5	4.25	3	
4052	KYGRA	880719	835	880726	815	880802	0.40	5	4.23	7201.0	15.3	4.48	3	
4085	KYGRA	880726	830	880802	830	880809	0.40	1	0.01	17.0			3	
4111	KYGRA	880802	830	880809	1120	880819		1	1.09	1854.0	29.2	4.18	3	
4140	KYGRA	880809	1120	880816	800	880829		1	0.01	16.0			3	
4141	KYGRA	880816	805	880823	821	880829		3	0.14	264.0	136.7	3.49	3	

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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3496	KYGRA	880105	1.00	1.05	130.0	4.05	89.9	39.5	0.019	0.743	-0.048	0.018	-0.086	3.288	2.098	-0.007	0.275	0.028	0.314	0.035
3529	KYGRA	880112	1.04	1.20	550.0	4.46	37.1	14.3	0.011	0.135	-0.007	0.050	-0.050	0.721	1.740	0.065	0.095	0.035	0.155	0.012
3553	KYGRA	880119	1.03	1.26	550.0	4.50	33.4	11.2	-0.002	0.064	-0.005	0.029	-0.034	0.530	1.282	0.033	0.025	0.010	0.034	0.006
3570	KYGRA	880126	0.98	1.10	530.0	4.33	48.9	23.8	0.017	0.776	-0.011	-0.017	-0.014	1.469	2.262	0.216	0.524	0.130	0.114	0.060
3595	KYGRA	880202	1.03	1.15	475.0	4.34	50.4	17.4	0.003	0.044	-0.018	0.033	-0.090	0.335	2.073	-0.003	0.011	0.012	0.064	0.003
3633	KYGRA	880209	9999	9999	126.0	3.82														
3650	KYGRA	880216	0.99	1.12	525.0	4.18	64.1	27.9	0.015	0.115	-0.005	0.047	-0.006	2.129	2.403	0.183	0.036	0.030	0.218	0.022
3666	KYGRA	880223	0.96	1.12	100.0	4.25	56.9	31.4	0.030	0.259	-0.004	0.051	-0.012	3.468	3.319	0.589	0.049	0.082	0.862	0.073
3681	KYGRA	880301	0.97	1.13	550.0	4.22	62.4	25.2	0.010	0.105	-0.007	0.024	0.045	1.187	2.736	0.230	0.051	0.020	0.138	0.016
3697	KYGRA	880308	0.99	1.11	550.0	4.22	62.4	27.7	0.015	0.175	-0.007	0.018	-0.006	1.431	3.273	0.292	0.088	0.026	0.317	0.030
3719	KYGRA	880315	0.97	1.08	150.0	3.90	124.0	56.3	0.023	0.216	-0.027	0.025	-0.019	5.216	4.110	0.412	0.081	0.024	0.546	0.058
3738	KYGRA	880322	0.97	1.10	550.0	4.57	30.0	19.3	0.024	0.333	-0.012	-0.038	-0.015	1.753	2.773	0.419	0.262	0.078	0.608	0.074
3781	KYGRA	880329	1.00	1.15	550.0	4.12	73.8	31.6	0.018	0.311	-0.004	0.025	-0.008	1.619	3.324	0.190	0.195	0.023	0.161	0.037
3782	KYGRA	880405	0.98	1.17	550.0	4.18	65.8	25.3	0.007	0.055	-0.004	0.025	-0.008	1.335	2.529	0.115	0.014	0.016	0.092	0.008
3793	KYGRA	880412	0.94	1.22	550.0	4.66	28.3	9.7	0.010	0.026	-0.015	0.044	-0.005	0.461	1.391	0.200	0.011	0.022	0.125	0.018
3821	KYGRA	880419	0.99	1.07	520.0	3.95	114.8	60.2	0.026	0.239	-0.008	0.048	-0.006	4.107	7.435	1.211	0.092	0.090	0.821	0.079
3853	KYGRA	880503	1.00	1.06	525.0	4.06	88.8	40.5	0.020	0.165	-0.005	-0.035	-0.004	2.923	3.769	0.434	0.052	0.082	0.254	0.043
3874	KYGRA	880510	1.04	1.02	375.0	3.60	243.9	128.3	0.085	0.346	-0.006	0.030	-0.005	8.306	13.815	1.404	0.127	0.154	1.437	0.131
3886	KYGRA	880517	1.04	1.01	540.0	4.13	79.7	38.7	0.022	0.175	-0.002	-0.031	-0.009	1.878	4.489	0.595	0.059	0.049	0.226	0.032
3913	KYGRA	880524	0.99	1.11	550.0	4.22	66.4	26.0	0.017	0.078	-0.003	-0.042	-0.016	1.560	2.615	0.240	0.013	0.027	0.165	0.015
3960	KYGRA	880607	1.08	0.97	470.0	3.83	166.8	71.3	0.026	0.204	-0.006	-0.023	-0.001	3.279	6.714	0.367	0.016	0.022	0.281	0.036
3961	KYGRA	880614	1.09	0.93	140.0	3.61	284.0	126.7	0.088	0.645	-0.006	-0.023	-0.001	6.458	11.284	0.611	0.144	0.151	0.686	0.115
3995	KYGRA	880628	1.05	1.03	50.0	3.29		248.6	-0.001	0.853	-0.009	-0.007	-0.022	11.937	27.964	1.716	0.327	0.177	2.445	0.235
4023	KYGRA	880705	1.10	0.96	350.0	3.95	127.5	55.7	0.022	0.114	-0.007	0.066	-0.020	2.106	5.745	0.325	0.043	0.017	0.221	0.033
4038	KYGRA	880712	1.03	1.08	500.0	4.24	66.0	24.9	0.010	0.055	-0.005	-0.066	-0.024	1.141	2.669	0.188	0.022	0.011	0.081	0.010
4052	KYGRA	880719	1.10	1.08	500.0	4.46	42.6	15.0	0.009	0.048	-0.003	-0.098	-0.021	0.799	1.589	0.095	0.017	0.006	0.051	0.006
4085	KYGRA	880726	1.15	1.10	12.0	3.75		96.1	0.071	0.259	-0.002	0.282	-0.051	6.351	14.351	1.127	0.120	0.134	2.076	0.201
4111	KYGRA	880802	1.03	1.05	520.0	4.17	74.4	29.3	0.014	0.061	-0.004	0.035	-0.019	1.437	2.729	0.177	0.018	0.009	0.054	0.007
4140	KYGRA	880809	1.09	1.09	10.0	3.68		105.6	0.094	0.451	-0.004	0.336	-0.030	7.688	12.946	0.766	0.227	-0.128	2.245	0.166
4141	KYGRA	880816	1.08	0.98	175.0	3.50	330.3	151.9	0.070	0.353	-0.004	-0.018	-0.029	7.189	14.999	0.868	0.045	0.040	0.782	0.062

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EPA State Operated Rain Network
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GGC ID	Site Code	Begin Day	Begin Time	End Day	End Time	Date Rec'd	Type	# Rain Events	Precip inches	Field Wt gm	Field Cond µmho/cm	Field pH	Comment Codes 1	Comment Codes 2
4172	KYGRA	880823	830	880830	810	880912		2	1.66	2732.0	23.0	4.31	3	
4173	KYGRA	880830	810	880906	810	880913				2718.0	9.1	4.76		
4262	KYGRA	880906	815	880913	953	881005		2	0.10	165.0	34.2	4.13		
4261	KYGRA	880913	1000	880920	825	881005				1875.0	31.2	4.18	3	
4260	KYGRA	880920	825	880927	825	881005					34.6	4.13	3	
4295	KYGRA	880927	825	881004	935	881020		1	0.01	40.0			3	
4306	KYGRA	881011	1130	881018	800	881024		3	0.13	264.0	37.0	4.15	3	
4315	KYGRA	881018	805	881025	800	881031		4		2723.0	17.8	4.43		
4434	KYGRA	881025	810	881101	804	881117		1	0.03	52.0				
4371	KYGRA	881101	806	881108	1235	881117		4	0.96	2069.0	12.8	4.59	3	
4388	KYGRA	881108		881115	800	881117		2	0.34	660.0	16.9	4.41	3	
4439	KYGRA	881115	800	881122	905	881215		3	4.41	7525.0	6.6	4.88	3	
4438	KYGRA	881122	805	881129	816	881215		1		696.0	13.0	4.66	3	
4541	KYGRA	881129	818	881206	857	890123			0.02	27.0				22
4528	KYGRA	881220	800	881227	900	890120	10.00	4	2.42	4304.0	12.2	4.59		22
3512	KYMAM	880105	930	880112	915	880121	1.00	1	0.02	115.0			3	33
3522	KYMAM	880112	915	880119	900	880125		4	1.11	2002.0	15.2	4.42		
3554	KYMAM	880119	930	880126	940	880202	12.40	5	2.33	3626.0	8.9	4.63		
3564	KYMAM	880126	940	880202	930	880205		3	2.24	3916.0			23	31
3596	KYMAM	880202	930	880209	935	880217		3		784.0	24.3	4.20		
3618	KYMAM	880209	947	880216	900	880223	2.42	4	1.30	2631.0	19.8	4.50	3	
3640	KYMAM	880216	900	880223	930	880229	0.54	2	0.63	1225.0	17.9	4.27	3	
3682	KYMAM	880301	1020	880308	900	880317	0.64	3	1.65	2870.0	21.8	4.32		
3712	KYMAM	880316	1130	880322	900	880328		1	0.05	122.0			3	21
3731	KYMAM	880322	1000	880329	930	880404	0.85	2	0.79	1263.0	15.3	4.54	3	
3747	KYMAM	880329	1000	880405	1100	880411		4	1.71	2805.0	25.3	4.24	3	
3780	KYMAM	880405	1005	880412	1005	880421		1	1.31	2233.0		4.42	3	
3804	KYMAM	880412	1005	880419	840	880426		1	0.67	1048.0	18.9		3	
3844	KYMAM	880503	1005	880510	915	880513		4		1507.0	17.4		3	32

EPA State Operated Rain Network
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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4172	KYGRA	880823	1.00	1.09	550.0	4.30	53.8	21.5	0.010	0.037		-0.053	-0.032	0.854	2.398	0.230	0.007	0.010	0.043	0.003
4173	KYGRA	880830	0.98	1.25	550.0	4.71	22.5	6.9	0.002	0.018		-0.053	-0.032	0.430	0.682	0.045	0.005	0.005	-0.016	-0.002
4262	KYGRA	880906	1.02	1.12	150.0	4.12	76.9	32.9	0.017	0.419	-0.005	0.044	-0.018	2.020	3.063	0.231	0.179	0.044	0.168	0.040
4261	KYGRA	880913	1.00	1.12	550.0	4.13	75.9	31.7	0.022	0.108	-0.005	0.039	-0.018	1.486	3.562	0.326	0.047	0.025	0.160	0.021
4260	KYGRA	880920	1.02	1.11	550.0	4.09	83.4	35.2	0.018	0.089	-0.005	0.050	-0.018	2.043	3.710	0.361	0.031	0.015	0.169	0.021
4295	KYGRA	880927	3.02	0.57	42.0	5.79		12.7	0.019	-0.031	-0.058	0.924	-0.012	1.732	0.635	0.384	-0.004	0.029	-0.208	-0.032
4306	KYGRA	881011	1.02	1.01	250.0	4.26	62.1	33.5	0.025	0.180	-0.081	0.044	-0.013	2.817	3.807	0.451	0.283	0.061	0.605	0.076
4315	KYGRA	881018	1.07	1.05	550.0	4.45	43.5	17.6	0.019	0.060	-0.082	0.025	-0.010	1.471	1.621	0.317	0.011	0.011	0.066	0.003
4434	KYGRA	881025	1.05	1.06		3.90		67.2	-0.030	0.440	-0.021	0.513	-0.021	4.838	7.226	1.097	0.296	0.112	0.765	0.060
4371	KYGRA	881101	0.97	1.16	575.0	4.53	32.7	12.6	0.015	0.067	-0.011	-0.045	-0.045	1.013	1.227	0.146	0.037	0.012	0.116	0.011
4388	KYGRA	881108	1.02	1.17	550.0	4.40	41.9	15.7	0.014	0.100	-0.021	-0.081	-0.028	0.984	1.571	0.063	0.059	0.011	0.094	0.010
4439	KYGRA	881115	0.96	1.51	500.0	4.79	21.1	4.8	0.008	0.058	-0.019	-0.028	-0.023	0.289	0.559	0.028	0.029	0.006	-0.028	-0.004
4438	KYGRA	881122	0.93	1.32	575.0	4.61	25.6	10.3	0.010	0.176	-0.019	0.035	-0.023	0.761	1.328	0.097	0.102	0.021	0.260	0.025
4541	KYGRA	881129	1.08	1.14	35.0	4.04		66.5	0.086	0.605	-0.026	-0.430	-0.027	13.083	6.753	1.963	0.344	0.114	2.216	0.210
4528	KYGRA	881220	1.00	1.28	525.0	4.55	30.9	10.6	0.009	0.067	-0.020	-0.064	-0.054	0.648	1.290	0.110	0.034	0.014	0.059	0.011
3512	KYMAM	880105	1.05	1.25	110.0	4.67	21.6	8.4	0.007	0.061	-0.008	0.025	-0.026	0.968	0.705	-0.004	0.023	0.023	0.154	0.016
3522	KYMAM	880112	1.08	1.15	480.0	4.49	35.2	13.1	0.007	0.115	-0.007	0.025	0.105	0.733	1.327	0.100	0.043	0.010	0.029	0.007
3554	KYMAM	880119	1.05	1.39	440.0	4.74	21.4	6.3	-0.002	0.091	-0.005	0.031	-0.032	0.372	0.801	0.071	0.036	0.018	0.016	0.004
3564	KYMAM	880126	1.04	1.08	550.0	4.53	35.3	16.0	0.007	0.536	-0.012	0.061	-0.015	0.678	1.835	0.102	0.307	0.111	0.160	0.056
3596	KYMAM	880202	1.04	1.09	515.0	4.20	68.7	25.7	0.004	0.061	-0.019	0.033	-0.093	0.426	3.043	0.076	0.025	0.010	0.042	0.004
3618	KYMAM	880209	0.99	1.15	550.0	4.43	36.5	15.4	0.009	0.106	-0.017	0.035	-0.165	1.139	1.378	0.169	0.049	-0.010	0.057	0.009
3640	KYMAM	880216	0.99	1.11	450.0	4.28	56.1	23.5	0.015	0.133	-0.008	0.042	-0.079	2.244	1.850	0.236	0.064	0.032	0.209	0.025
3682	KYMAM	880301	1.02	1.10	475.0	4.44	42.7	18.8	0.011	0.137	-0.007	0.020	-0.013	1.179	2.371	0.359	0.077	0.022	0.214	0.022
3712	KYMAM	880316	0.98	1.08	120.0	4.00	99.7	48.3	0.022	0.169	-0.024	-0.014	-0.020	3.703	4.795	0.908	0.089	0.034	0.228	0.036
3731	KYMAM	880322	0.96	1.14	500.0	4.56	29.9	15.5	-0.008	0.408	-0.018	-0.029	-0.016	1.000	2.042	0.302	0.255	0.036	0.263	0.048
3747	KYMAM	880329	1.04	1.00	550.0	4.36	48.9	22.5	0.008	0.220	-0.011	-0.043	-0.021	1.435	2.138	0.266	0.136	0.023	0.100	0.024
3780	KYMAM	880405	1.00	1.17	550.0	4.46	37.3	15.1	0.008	0.088	-0.004	0.029	-0.008	0.875	1.791	0.250	0.050	0.018	0.072	0.010
3804	KYMAM	880412	0.98	1.13	500.0	4.30	55.3	22.3	0.018	0.082	-0.013	0.068	-0.005	1.203	2.501	0.313	0.026	0.026	0.076	0.068
3844	KYMAM	880503	0.93	1.18	500.0	4.31	49.4	21.6	0.014	0.132	-0.006	0.048	-0.009	1.168	2.652	0.394	0.072	0.033	0.186	0.030

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GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3887	KYMAM	880517	920	880524	930	880531		3	0.65	1115.0	18.9	4.29	3	
3914	KYMAM	880524	930	880531	940	880607		1	0.34	34.0				
3944	KYMAM	880607	955	880614	925	880622	0.24	1	1.14	1917.0	48.2	4.20	3	313234
4000	KYMAM	880705	945	880712	905	880718	0.36	1	0.41	1029.0	21.2	4.05	3	
4024	KYMAM	880712	905	880719	940	880725	0.39	4		4454.0	22.4	4.19	3	
4047	KYMAM	880719	940	880726	900	880801	0.38	3		6067.0	25.9	4.19	3	
4071	KYMAM	880726	900	880802	900	880808	0.49	1	0.19	328.0	42.6	4.05	3	
4093	KYMAM	880802	900	880809	900	880812	0.43	2	0.59	887.0	91.0	3.65		
4142	KYMAM	880816	900	880823	1009	880829	0.32			5744.0	22.8	4.26	3	
4189	KYMAM	880823	1009	880830	905	880908	0.43	3		3564.0	29.9	4.15		
4174	KYMAM	880830	905	880906	915	880912	0.30			3211.0	9.4	4.65	3	
4225	KYMAM	880906	915	880913	915	880922	0.35			1280.0	14.1	4.48	3	
4193	KYMAM	880913	915	880920	945	880923	0.40	3	1.81	3189.0	7.8	4.94		
4263	KYMAM	880920	945	880927	930	881005		1		2566.0	16.5	4.44		
4278	KYMAM	880927	930	881004	935	881011		2	0.16	276.0	39.4	4.07	3	
4307	KYMAM	881011	930	881018	1010	881019	0.38	2	0.09	147.0			3	
4316	KYMAM	881018	1010	881025	950	881028	0.38	3	0.58	995.0	26.2	4.18	3	
4342	KYMAM	881025	950	881101	1000	881109	0.33	3	0.77	1310.0	26.3	4.18	3	
4368	KYMAM	881101	1000	881108	930	881116		3	0.90	1891.0	16.5	4.50	3	
4393	KYMAM	881108	930	881115	1000	881117	0.38	2		2307.0	14.9	4.40	3	
4376	KYMAM	881115	1000	881122	930	881117	0.36	4	4.71	8331.0	17.9	4.37	3	
4415	KYMAM	881122	935	881129	1000	881206	0.23	2	1.14	1958.0	11.4	4.55	3	
4435	KYMAM	881129	1000	881206	1000	881209	0.35		0.01	57.0				
4490	KYMAM	881220	900	881227	930	890104	0.29	5	4.41	7667.0	12.4	4.48		
4491	KYMAM	881227	930	890103	900	890119		3	1.10	1826.0	12.9	4.25		

EPA State Operated Rain Network
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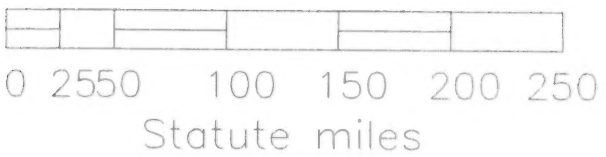
GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3887	KYMAM	880517	0.99	1.08	520.0	4.41	45.5	20.2	0.013	0.114	-0.002	-0.032	-0.009	1.150	2.571	0.393	0.039	0.048	0.225	0.026
3914	KYMAM	880524	0.99	1.07	80.0	4.73	23.4	12.1	0.009	0.099	-0.003	-0.042	-0.015	1.104	1.551	0.452	0.055	0.037	0.111	0.014
3944	KYMAM	880607	0.99	1.04	550.0	3.94	116.7	56.6	0.034	0.463	-0.002	-0.012	-0.007	3.078	5.830	0.905	0.037	0.346	0.195	0.032
4000	KYMAM	880705	1.02	1.04	550.0	4.24	62.8	27.8	0.015	0.104	-0.009	0.008	-0.015	1.743	2.821	0.318	0.045	0.013	0.194	0.024
4024	KYMAM	880712	1.01	1.08	550.0	4.28	58.8	23.7	0.012	0.139	-0.007	-0.028	-0.020	1.451	2.338	0.230	0.067	0.013	0.122	0.020
4047	KYMAM	880719	1.10	1.00	550.0	4.22	69.1	28.1	0.013	0.089	-0.004	-0.080	-0.023	1.154	2.923	0.162	0.026	0.007	0.088	0.007
4071	KYMAM	880726	1.04	1.02	300.0	4.09	91.3	41.9	0.029	0.153	-0.012	0.030	-0.038	3.189	3.980	0.657	0.056	0.023	0.273	0.028
4093	KYMAM	880802	1.00	0.97	550.0	3.65	242.8	102.1	0.027	0.312	-0.003	0.023	-0.040	3.498	8.794	0.355	0.029	0.012	0.114	0.012
4142	KYMAM	880816	1.04	1.05	550.0	4.31	57.4	21.3	-0.005	0.074	-0.004	-0.018	-0.028	0.853	2.184	0.121	0.027	-0.011	0.042	0.004
4189	KYMAM	880823	0.96	1.07	550.0	4.11	79.9	34.4	0.019	0.077	-0.002	0.027	-0.016	1.592	3.513	0.413	0.015	0.017	0.112	0.009
4174	KYMAM	880830	1.03	1.20	525.0	4.73	22.2	7.1	0.010	0.058		-0.054	-0.034	0.603	0.558	0.051	0.021	0.012	-0.017	0.003
4225	KYMAM	880906	1.07	1.14		4.50	33.8	13.3	0.009	0.286	-0.016	0.064	-0.020	0.644	1.235	0.048	0.149	0.012	0.024	0.019
4193	KYMAM	880913	1.01	1.27	550.0	4.81	21.1	6.2	0.007	0.069	-0.003	0.048	-0.018	0.372	0.706	0.092	0.042	0.009	0.027	0.004
4263	KYMAM	880920	1.02	1.16	550.0	4.44	38.4	14.8	0.005	0.042	-0.004	0.052	-0.018	0.915	1.506	0.122	0.026	-0.009	0.086	0.004
4278	KYMAM	880927	1.00	1.07	250.0	4.07	86.0	41.7	0.024	0.749	-0.057	0.051	-0.012	2.568	3.996	0.409	0.481	0.041	0.205	0.122
4307	KYMAM	881011	1.09	1.03	150.0	4.30	56.8	25.8	0.021	0.131	-0.081	0.056	-0.013	1.222	3.102	0.259	0.106	0.044	0.212	0.032
4316	KYMAM	881018	1.04	1.01	575.0	4.29	57.1	26.7	0.019	0.086	-0.082	0.031	-0.010	1.853	2.662	0.453	0.048	0.022	0.148	0.007
4342	KYMAM	881025	1.04	1.02	575.0	4.26	62.5	26.8	0.011	0.086	-0.024	-0.033	-0.003	2.005	2.427	0.269	0.042	0.022	0.204	0.004
4368	KYMAM	881101	0.94	1.17	579.0	4.52	32.7	14.0	0.012	0.132	-0.011	-0.045	-0.046	1.112	1.512	0.254	0.073	0.031	0.147	0.022
4393	KYMAM	881108	0.97	1.19	575.0	4.51	34.2	13.4	0.013	0.132	-0.024	-0.090	-0.025	0.658	1.679	0.222	0.086	0.018	0.062	0.014
4376	KYMAM	881115	1.00	1.17	575.0	4.44	39.2	14.5	0.011	0.155	-0.011	-0.053	-0.036	0.850	1.447	0.099	0.085	0.012	0.056	0.008
4415	KYMAM	881122	0.97	1.18	575.0	4.69	24.0	9.9	0.010	0.264	-0.012	-0.079	-0.031	0.566	1.177	0.157	0.157	0.018	0.089	0.024
4435	KYMAM	881129	1.08	1.07		4.20		29.6	-0.030	0.274	-0.021	0.531	-0.022	3.787	1.006	0.176	0.233	0.043	0.296	-0.042
4490	KYMAM	881220	1.01	1.53	500.0	4.64	25.0	7.9	0.013	0.154	-0.007	0.015	-0.031	0.652	1.174	0.134	0.103	0.025	0.076	0.011
4491	KYMAM	881227	0.95	1.26	475.0	4.52	33.1	12.0	0.008	0.188	-0.006	-0.027	-0.029	0.861	1.272	0.121	0.135	0.026	0.072	0.018

Louisiana



□ Major city (for reference)
* EPA Acid Rain Site

LOUISIANA

SITE	SITE NAME	NEAREST CITY	COUNTY	SAMPLING PERIOD[1] BEGIN	END	#SAMPLES	%NON-VOID[2]
LACAR	Carville	Carville	Iberville			26	100.0
LACHS	Chase	Chase	Franklin			41	100.0
LAHOM	Homer	Homer	Claiborne	JUN 88 -	DEC 88	23	100.0
LAROS	Rosepine	Rosepine	Vernon			42	100.0

(1) "BEGIN" was JAN 88 and "END" was DEC 88 unless otherwise noted. For sites which were not operational during 1988, the date range of operation is given.

(2) Percentage of samples received which were not voided by GGC due to contamination.

Figure 2-1 (continued)
Site: LACAR

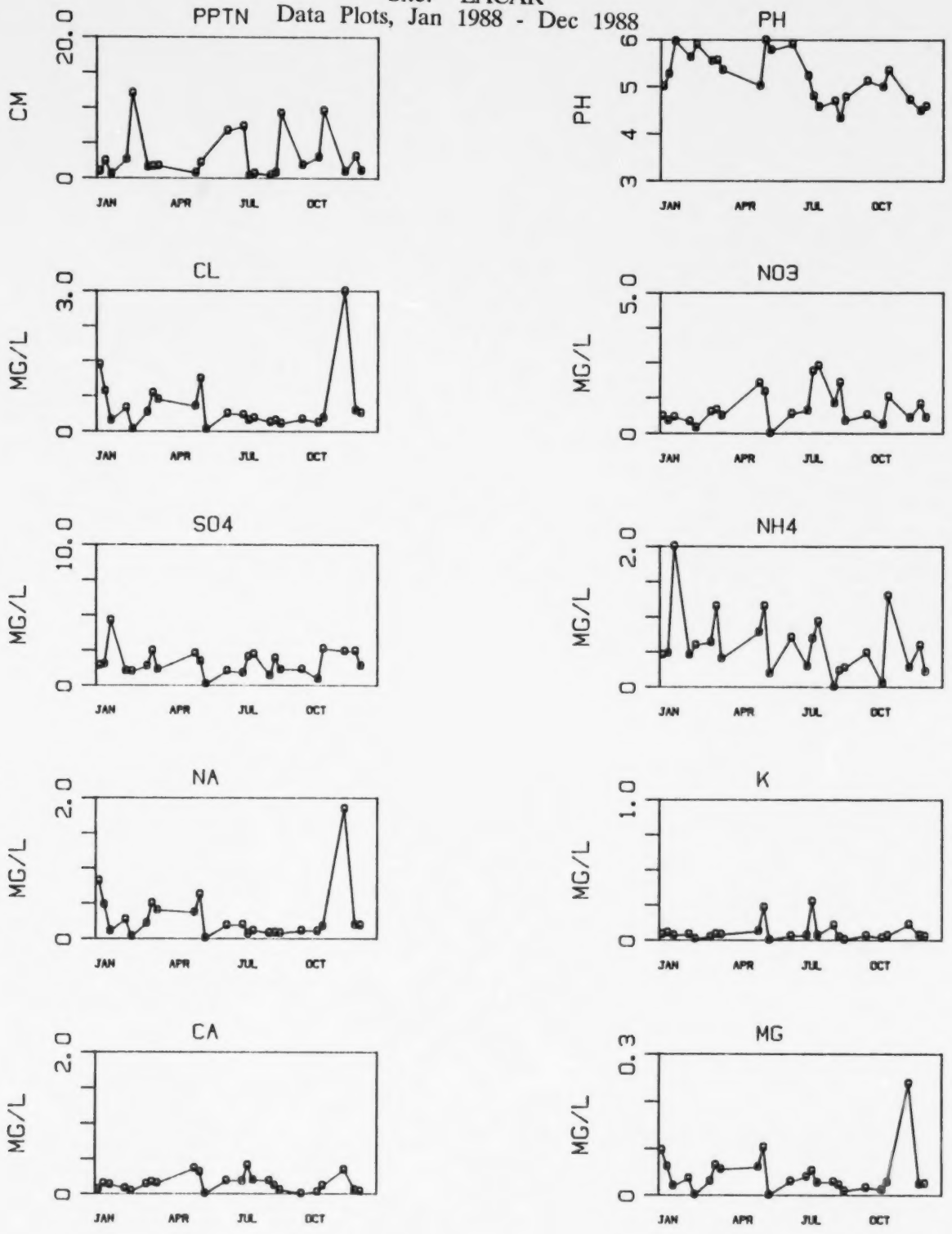


Figure 2-1 (continued)
Site: LACHS
PPTN Data Plots, Jan 1988 - Dec 1988

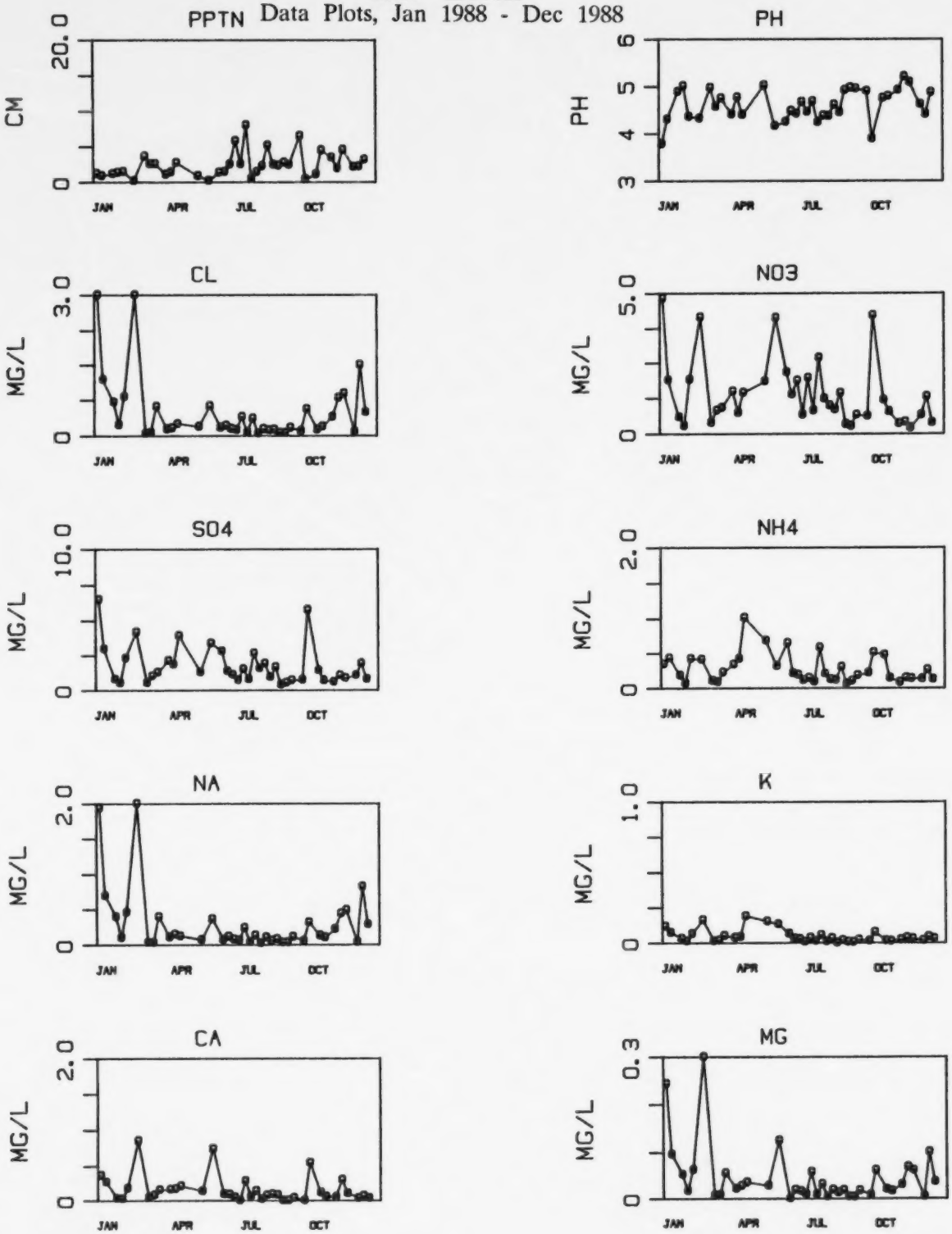


Figure 2-1 (continued)
Site: LAHOM
Data Plots, Jan 1988 - Dec 1988

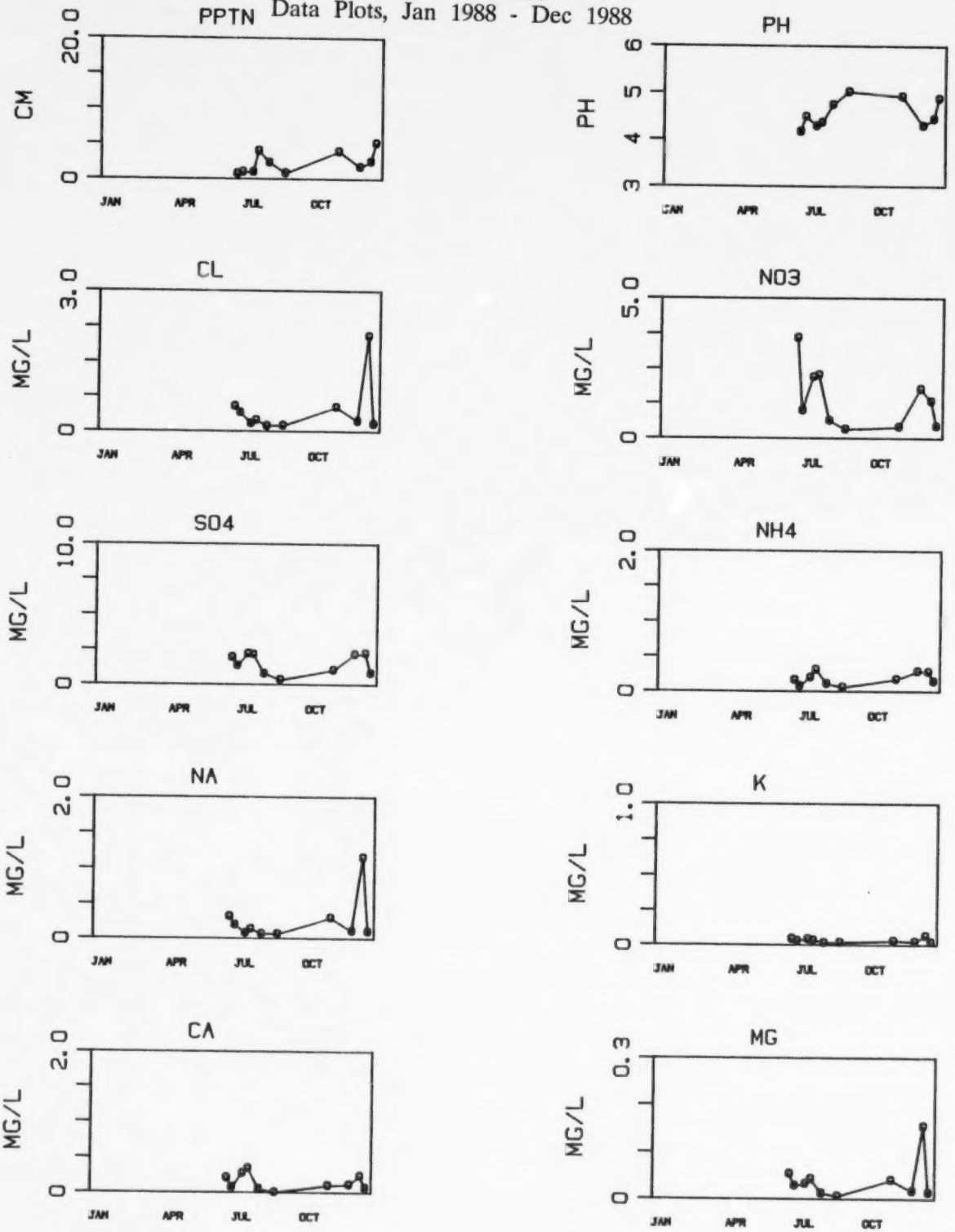
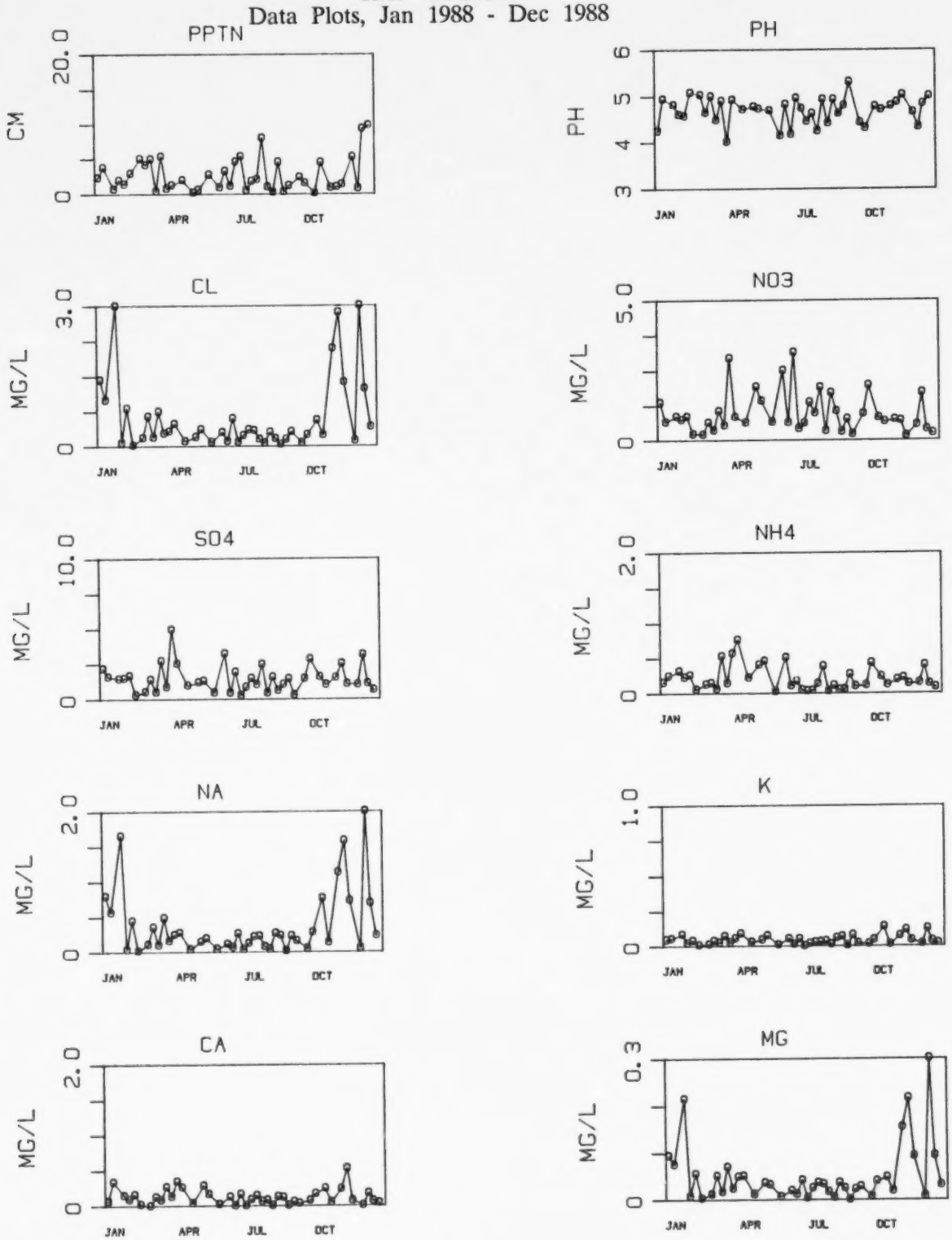


Figure 2-1 (continued)
Site: LAROS
Data Plots, Jan 1988 - Dec 1988



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EPA State Operated Rain Network
1988 Sampling and Field Data

GGC ID	Site Code	Begin Day	Begin Time	End Day	End Time	Date Rec'd	Type	# Rain Events	Precip inches	Field Wt gm	Field Cond µmho/cm	Field pH	Comment Codes 1	Comment Codes 2
3497	LACAR	880105	1505	880112	1255	880120	0.52	1	0.40	644.0	15.6	4.87		33
3530	LACAR	880112	1255	880120	1515	880126	0.42	3	0.97	1295.0	10.5	4.85	3	33
3555	LACAR	880120	1515	880126	1329	880202	0.52	1	0.25	455.0	20.0	5.96	3	33
3613	LACAR	880209	1200	880217	1125	880222	20.35	3	1.04	773.0	9.6	5.05	3	2133
3648	LACAR	880217	1125	880223	1340	880301	20.48	2	4.73	5011.0	5.0	5.46		21
3698	LACAR	880308	1420	880315	1400	880323	0.46	1	0.64	923.0	9.4	5.67	3	33
3720	LACAR	880315	1400	880322	910	880329	0.60	2	0.66	1070.0	17.0	5.54	3	
3740	LACAR	880322	1156	880329	1120	880406	0.44	3	0.68	1193.0	9.4	5.19		
3870	LACAR	880510	1210	880517	1220	880523	0.60	2	0.30	498.0	16.9	4.96	3	33
3891	LACAR	880517	1220	880524	1225	880531	0.45	2	0.88	1003.0	16.4	6.07	3	33
3923	LACAR	880524	1225	880601	955	880608	0.47				2.0	5.76		
3971	LACAR	880621	1220	880628	1255	880705	0.62	4	2.65	4572.0	9.6	5.98		33
4015	LACAR	880705	1125	880712	1120	880720	0.51	5	1.68	2876.0	16.7	5.90	3	323334
4025	LACAR	880712	1120	880719	1330	880725	0.55	4	2.90	3683.0	8.0	5.31		
4053	LACAR	880719	1330	880726	1435	880802		5	0.16	334.0	19.9		3	
4106	LACAR	880726	1435	880802	1135	880816		3	0.28	568.0		4.51	3	
4190	LACAR	880816	1109	880823	1250	880908	0.52	3	0.17	239.0	9.6	4.91	34	
4204	LACAR	880823	1250	880830	1315	880907	0.55	1	0.33	454.0	28.3	4.22	3	
4205	LACAR	880830	1315	880906	1154	880907	0.52	4	3.62	5989.0	9.1	4.75	3	33
4226	LACAR	880906	1154	880913	1200	880922	0.60	2	0.59	821.0	7.1	5.13	34	3132
4296	LACAR	880927	1245	881004	1332	881020	0.50	3	0.75	830.0	8.6	4.94	3	21
4344	LACAR	881018	1409	881025	1700	881109	0.50	2	1.19	2212.0	6.3	4.58	3	33
4343	LACAR	881025	1700	881101	1105	881109	0.50	2	3.77	6468.0	13.6	5.15	3	
4406	LACAR	881122	1355	881129	1715	881202	0.45	2	0.40	728.0	30.0	4.44	3	
4450	LACAR	881206	1219	881213	1509	881219	0.30	3	1.25	2031.0	43.6	4.33	3	33
4462	LACAR	881213	1509	881220	1240	890102	0.30	1	0.45	776.0	17.5	4.58	3	
3498	LACHS	880105	1230	880112	915	880120	2.36	4	0.48	68.5			3	21
3523	LACHS	880112	920	880119	1415	880125	0.38	5	0.36	636.0	36.0	4.22	3	33
3582	LACHS	880126	845	880202	900	880210	0.38	4	0.48	889.5	13.3	4.72		

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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3497	LACAR	880105	0.97	1.11	350.0	5.00	14.4	12.6	0.013	1.417	-0.051	0.015	-0.092	0.597	1.424	0.458	0.816	0.041	0.068	0.097
3530	LACAR	880112	0.96	1.08	450.0	5.27	12.4	9.8	0.015	0.851	-0.007	0.027	-0.052	0.439	1.504	0.481	0.482	0.053	0.148	0.062
3555	LACAR	880120	0.85	1.08	175.0	5.96		17.6	0.053	0.232	0.009	0.009	-0.030	0.569	4.612	2.177	0.111	0.033	0.132	0.020
3613	LACAR	880209	0.93	1.00	400.0	5.62		7.1	0.009	0.491	-0.018	0.041	-0.157	0.404	1.037	0.457	0.266	0.040	0.079	0.036
3648	LACAR	880217	0.74	1.26	550.0	5.89		4.1	0.031	0.041	-0.006	0.039	-0.035	0.198	0.991	0.597	0.030	0.008	0.039	
3698	LACAR	880308	0.93	1.10	550.0	5.54		7.9	0.017	0.404	-0.007	0.027	-0.006	0.756	1.369	0.636	0.216	0.022	0.144	0.030
3720	LACAR	880315	0.87	1.01	525.0	5.56		14.4	0.042	0.808	-0.026	-0.019	-0.019	0.813	2.469	1.151	0.499	0.042	0.168	0.065
3740	LACAR	880322	0.93	1.08	550.0	5.35	9.2	8.2	0.013	0.671	-0.011	-0.039	-0.015	0.608	1.140	0.402	0.400	0.038	0.153	0.055
3870	LACAR	880510	0.99	1.07	550.0	5.02	17.2	14.7	0.022	0.525	-0.006	0.029	-0.005	1.763	2.269	0.780	0.371	0.065	0.363	0.060
3891	LACAR	880517	0.78	1.05	480.0	5.99		14.7	0.014	1.119	-0.002	0.119	-0.008	1.460	1.705	1.152	0.625	0.231	0.311	0.102
3923	LACAR	880524	0.23	7.29	460.0	5.78		0.2	0.001	0.040	-0.002	-0.037	-0.012	-0.013	0.083	0.191	0.008	-0.004	-0.017	-0.002
3971	LACAR	880621	0.71	1.07	550.0	5.90		7.3	0.017	0.372	-0.008	-0.027	-0.001	0.682	1.016	0.706	0.186	0.029	0.185	0.029
4015	LACAR	880705	0.88	1.06	550.0	5.83		13.2	0.044	0.437	-0.007	-0.019	-0.015	1.442	2.382	1.422	0.224	0.034	0.125	0.033
4025	LACAR	880712	0.97	1.01	530.0	5.23	13.9	7.5	0.009	0.344	-0.007	0.032	-0.021	0.796	0.880	0.292	0.194	0.034	0.179	0.039
4053	LACAR	880719	1.04	1.04	130.0	4.80	23.9	16.6	0.019	0.234	-0.003	0.216	-0.021	2.181	2.035	0.689	0.070	0.274	0.407	0.052
4106	LACAR	880726	1.00	1.04	280.0	4.57	29.7	20.5	0.065	0.278	-0.004	-0.026	-0.017	2.384	2.223	0.931	0.110	0.033	0.194	0.027
4190	LACAR	880816	1.04	1.04	200.0	4.69	26.7	10.6	0.010	0.192	-0.002	0.046	-0.017	1.048	0.714	-0.007	0.079	0.105	0.183	0.028
4204	LACAR	880823	1.10	1.01	250.0	4.33	57.2	23.3	0.026	0.229	-0.005	0.049	-0.025	1.772	1.924	0.231	0.083	0.022	0.115	0.021
4205	LACAR	880830	0.91	1.32	550.0	4.78	21.4	7.5	0.007	0.164	-0.005	-0.037	-0.025	0.435	1.111	0.273	0.075	0.004	0.054	0.009
4226	LACAR	880906	1.01	1.14	330.0	4.98	15.7	6.1	0.007	0.146	-0.016	0.055	-0.020	0.386	0.745	0.203	0.059	0.058	0.028	0.008
4296	LACAR	880927	1.05	1.08	525.0	5.12	12.0	7.7	0.020	0.251	-0.058	0.043	-0.013	0.642	1.134	0.486	0.111	0.031	-0.019	0.016
4344	LACAR	881018	1.02	1.28	575.0	5.00	15.0	4.4	0.008	0.186	-0.020	-0.033	-0.003	0.311	0.466	0.056	0.102	0.015	0.025	0.011
4343	LACAR	881025	0.93	1.00	400.0	5.35	10.6	14.3	0.046	0.284	-0.022	0.036	-0.003	1.279	2.608	1.299	0.174	0.031	0.116	0.028
4406	LACAR	881122	1.00	1.06	400.0	4.72	22.5	24.4	0.018	3.346	-0.015	-0.070	-0.037	0.540	2.435	0.278	1.845	0.110	0.341	0.237
4450	LACAR	881206	1.04	1.11	550.0	4.49	37.7	18.5	0.025	0.444	-0.012	0.031	-0.028	1.018	2.444	0.591	0.195	0.035	0.057	0.023
4462	LACAR	881213	1.00	1.65	350.0	4.58	31.7	8.8	0.011	0.391	-0.015	0.045	-0.038	0.548	1.400	0.220	0.187	0.027	0.035	0.025
3498	LACHS	880105	0.98	1.04	70.0	3.78	163.2	85.6	0.033	3.177	-0.054	0.014	-0.097	4.820	6.467	0.347	1.933	0.118	0.368	0.244
3523	LACHS	880112	1.00	1.07	480.0	4.30	52.5	29.6	0.014	1.185	-0.007	0.022	-0.042	1.889	2.971	0.431	0.695	0.072	0.267	0.096
3582	LACHS	880126	0.98	1.14	525.0	4.89	16.2	8.7	-0.002	0.706	-0.021	-0.008	-0.008	0.588	0.790	0.183	0.395	0.032	0.032	0.053

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GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3597	LACHS	880202	900	880209	930	880217	0.36	2	0.55	934.5	7.7	4.77		
3619	LACHS	880209	930	880215	1320	880223	0.38	3	0.59	1011.0	28.8	4.15	3	
3661	LACHS	880223	850	880301	945	880307		1	0.07	110.0			3	
3686	LACHS	880308	1015	880315	1030	880321	0.39	2	1.44	2400.0	5.5	4.79		
3713	LACHS	880315	1030	880322	840	880328	0.38	2	1.02	1676.0	14.5	4.41	3	
3732	LACHS	880322	840	880329	845	880404	0.36	3	1.02	1758.5	13.3	4.64	3	
3753	LACHS	880329	845	880405	900	880412	0.38	5	4.35	7714.0	6.3	4.79		34
3783	LACHS	880405	900	880412	1030	880421	0.44	4	0.44	683.5	24.7	4.35	3	
3794	LACHS	880412	1019	880419	745	880425		1	0.56	990.5	15.5	4.50	3	
3822	LACHS	880419	745	880426	1130	880503	0.44	1	1.08	1846.0	31.0	4.30	3	33
3892	LACHS	880517	750	880524	830	880531	0.40	3	0.35	558.0	15.4	4.58	3	33
3935	LACHS	880531	915	880607	815	880616	0.41	2	0.08	147.0			3	
3952	LACHS	880614	900	880621	845	880627	0.42	2	0.54	940.0	39.1	3.87	3	
3972	LACHS	880621	845	880628	900	880705	0.43	4	0.58	1011.0	17.9	4.02		
3980	LACHS	880628	1000	880705	830	880707	0.40	3	1.00	1716.0	19.5	3.75	3	
4010	LACHS	880705	825	880712	755	880719	0.41	3	2.29	3882.0	12.3	3.40	1	
4026	LACHS	880712	755	880719	840	880725	0.44	3	0.99	1713.5	19.1	3.27	3	
4039	LACHS	880719	840	880726	930	880729	0.44	4	3.16	4586.0	10.2	4.50	3	
4072	LACHS	880726	930	880802	630	880808		2	0.20	349.0	39.9	4.14	3	
4099	LACHS	880802	630	880809	900	880815		1	0.58	946.5	19.1	4.15		
4114	LACHS	880809	900	880816	745	880822	0.45	3	0.90	1525.0	19.1	4.16	3	
4144	LACHS	880816	745	880823	735	880829	0.46	3	2.03	3517.0	11.5	4.03		
4157	LACHS	880823	745	880830	900	880901	0.46	1	0.98	1688.5	17.9	3.97	3	
4175	LACHS	880830	900	880906	925	880912	0.46	3	0.92	1570.0	5.5	3.76	3	
4227	LACHS	880906	925	880913	735	880922	0.46	1	1.09	1856.0	6.4	4.25		
4194	LACHS	880913	740	880920	800	880923	0.45	1	0.96	1556.0	7.6	4.44	3	
4281	LACHS	880920	805	880927	845	881011	0.46							
4280	LACHS	880927	845	881004	900	881011	0.43	3	2.55	4390.5	6.6	3.90		
4297	LACHS	881004	905	881011	900	881020	0.45	1	0.17	295.5	6.6	3.90	3	
4317	LACHS	881018	940	881025	840	881031	0.43	2	0.44	787.0	11.2	4.71		

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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3597	LACHS	880202	1.11	1.10	550.0	5.01	13.3	5.3	0.006	0.231	-0.019	0.034	-0.099	0.285	0.522	0.070	0.103	0.013	0.026	0.017
3619	LACHS	880209	1.01	1.07	550.0	4.36	45.8	25.0	0.010	0.824	-0.017	0.039	-0.166	1.905	2.308	0.422	0.458	0.066	0.180	0.063
3661	LACHS	880223	1.03	1.06	120.0	4.32	51.8	50.4	0.037	5.350	-0.003	0.013	-0.012	4.153	4.171	0.407	3.353	0.161	0.851	0.437
3686	LACHS	880308	0.94	1.27	550.0	4.97	15.2	4.7	-0.006	0.052	-0.006	0.029	-0.006	0.389	0.549	0.107	0.031	0.013	0.050	0.007
3713	LACHS	880315	0.97	1.20	550.0	4.57	30.9	10.7	0.010	0.070	-0.025	-0.014	-0.020	0.817	1.023	0.089	0.030	0.018	0.082	0.009
3732	LACHS	880322	0.97	1.12	550.0	4.75	19.4	11.8	-0.008	0.615	-0.018	-0.030	-0.016	0.917	1.287	0.226	0.396	0.051	0.156	0.055
3753	LACHS	880329	0.89	1.31	500.0	4.96	14.7	4.8	-0.006	0.189	-0.016	-0.041	-0.028	0.384	0.472	0.080	0.111	0.016	0.042	0.015
3783	LACHS	880405	1.01	1.11	410.0	4.41	40.0	19.3	0.013	0.144	-0.004	0.026	-0.008	1.490	2.121	0.339	0.110	0.038	0.164	0.022
3794	LACHS	880412	0.98	1.13	550.0	4.77	20.8	11.5	0.014	0.162	-0.014	0.074	-0.005	0.730	1.831	0.420	0.146	0.043	0.171	0.028
3822	LACHS	880419	0.96	1.09	550.0	4.40	44.6	25.7	0.013	0.249	-0.008	0.048	-0.006	1.445	3.916	1.011	0.124	0.187	0.212	0.035
3892	LACHS	880517	1.02	1.03	350.0	5.02	17.0	11.5	0.009	0.195	-0.016	0.082	-0.005	1.841	1.293	0.685	0.071	0.151	0.138	0.028
3935	LACHS	880531	1.03	1.03	150.0	4.16	77.3	39.5	0.038	0.622	-0.004	0.022	-0.018	4.125	3.367	0.315	0.362	0.130	0.740	0.124
3952	LACHS	880614	0.99	1.02	550.0	4.25	62.7	29.6	0.026	0.173	-0.004	0.025	-0.001	2.161	2.789	0.647	0.072	0.065	0.096	-0.005
3972	LACHS	880621	1.01	1.04	475.0	4.48	39.9	16.7	0.016	0.214	-0.008	-0.027	-0.001	1.380	1.349	0.212	0.118	0.031	0.090	0.019
3980	LACHS	880628	1.05	1.02	540.0	4.42	45.6	18.3	0.022	0.149	-0.006	-0.021	-0.002	1.866	1.121	0.190	0.078	0.027	0.050	0.017
4010	LACHS	880705	0.98	1.16	550.0	4.67	27.4	8.9	0.007	0.125	-0.007	0.015	-0.012	0.670	0.733	0.112	0.064	0.007	-0.015	0.009
4026	LACHS	880712	1.03	1.03	540.0	4.46	40.4	19.2	0.016	0.396	-0.007	-0.031	-0.022	1.960	1.513	0.147	0.240	0.035	0.284	0.057
4039	LACHS	880719	1.01	1.11	550.0	4.68	29.1	9.3	0.010	0.072	-0.005	-0.067	-0.024	0.811	0.784	0.094	0.038	0.013	0.061	0.009
4072	LACHS	880726	1.05	1.03	225.0	4.24	63.5	30.7	0.036	0.360	-0.012	0.040	-0.039	2.682	2.641	0.582	0.130	0.053	0.143	0.031
4099	LACHS	880802	1.00	1.09	550.0	4.38	46.9	18.0	0.014	0.049	-0.003	0.034	-0.031	1.226	1.560	0.203	0.022	0.010	0.021	0.004
4114	LACHS	880809	1.02	1.10	550.0	4.37	47.4	18.7	-0.013	0.142	-0.004	0.047	-0.021	0.987	1.910	0.125	0.106	0.032	0.075	0.019
4144	LACHS	880816	0.95	1.15	550.0	4.61	30.2	10.6	0.010	0.116	-0.004	-0.017	-0.026	0.846	0.939	0.115	0.060	-0.010	0.093	0.013
4157	LACHS	880823	1.03	1.07	550.0	4.45	42.9	17.5	0.026	0.127	-0.004	0.039	-0.012	1.429	1.654	0.302	0.082	0.018	0.082	0.018
4175	LACHS	880830	0.92	1.28	550.0	4.92	15.7	4.5	0.011	0.062		-0.054	-0.034	0.336	0.405	0.066	0.033	0.007	-0.017	0.004
4227	LACHS	880906	1.06	1.00	550.0	4.97	14.7	5.7	0.009	0.059	-0.015	0.058	-0.020	0.271	0.533	0.105	0.035	0.005	-0.010	0.004
4194	LACHS	880913	1.06	1.10	550.0	4.95	15.1	6.8	0.008	0.167	-0.003	0.048	-0.019	0.657	0.698	0.182	0.111	0.021	0.038	0.018
4281	LACHS	880920	9999	9999																
4280	LACHS	880927	1.08	1.08	550.0	4.90	18.8	7.2	0.006	0.100	-0.058	0.058	-0.011	0.615	0.738	0.218	0.056	0.014	-0.033	0.009
4297	LACHS	881004	1.01	1.02	150.0	3.89	134.0	63.8	0.032	0.557	-0.057	0.032	-0.013	4.207	5.752	0.508	0.313	0.074	0.547	0.061
4317	LACHS	881018	0.94	1.05	450.0	4.75	22.3	12.3	0.018	0.130	-0.082	0.029	-0.010	1.177	1.416	0.472	0.132	0.016	0.115	0.020

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GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
4345	LACHS	881025	830	881101	1030	881109	0.44	4	1.76	3007.5	8.7	4.77	3	
4394	LACHS	881107	1215	881115	1225	881117		2	1.36	2286.5	7.3	5.00	3	
4385	LACHS	881115	1225	881122	1040	881117	0.40	2	0.76	1306.5	8.0	5.26	3	
4428	LACHS	881122	1045	881129	905	881206	0.42	2	1.79	3035.5	8.2	4.92	3	
4449	LACHS	881206	1140	881213	1043	881219		4	0.85	1285.0	11.9	4.54		
4461	LACHS	881213	1043	881220	1005	890102	0.42	1	0.87	1435.0	24.2	4.38	3	
4493	LACHS	881220	1005	881227	1155	890103		5	1.24	2151.0	10.1	4.81		
4494	LACHS	881227	1155	890103	1637	890119		5	3.73	6099.0	10.0	4.88		223334
3987	LAHOM	880628	1000	880705	1000	880711		1	0.27	473.0	40.0	4.49	3	
4034	LAHOM	880705	830	880712	1100	880728		3		637.0	16.8	4.46	3	
4035	LAHOM	880712	1100	880719	1230	880728		2	0.69	1132.5	23.6	4.53	3	3234
4048	LAHOM	880719	1230	880726	1130	880801		2	0.37	550.5	28.4	4.40	3	
4086	LAHOM	880726	1130	880802	1115	880809		1	1.55	2687.7	23.3	4.30	3	
4100	LAHOM	880802	1100	880809	1100	880815		2	1.48	2496.0	22.3	4.30		3233
4115	LAHOM	880809	1100	880816	1045	880822		4	0.90	1512.5	9.1	4.78	3	
4134	LAHOM	880816	1045	880823	1100	880826		2	1.01	1766.8	16.2	4.42	13	34
4191	LAHOM	880823	1100	880830	1600	880908		1	0.50	866.5	30.8	4.19	3	3234
4176	LAHOM	880830	1600	880906	1600	880912		1	0.32	598.1	7.5	4.67		
4228	LAHOM	880906		880913		880922		2	0.83	1460.2	6.4	4.77	3	34
4195	LAHOM	880913	1600	880920	1030	880923		1	0.35	552.3	10.3	4.70	34	34
4254	LAHOM	880920	1030	880927	1600	881002								
4282	LAHOM	880927	1600	881004	1600	881011		3	2.15	3835.2	14.7	7.45	3	3234
4298	LAHOM	881004	1600	881011	1600	881021		2	0.28	441.1	45.8	3.97	3	34
4318	LAHOM	881018	1500	881025	1600	881031		3	0.41	683.6	31.1	4.49	3	32
4351	LAHOM	881025	1600	881101	1600	881109		4	2.03	3489.8	10.6	4.39	3	32
4389	LAHOM	881108	1430	881115	1600	881117		1	1.54	2725.1	10.1	5.13	3	33
4401	LAHOM	881115	1600	881122	1530	881129		2	7.43	2791.2	7.5	4.85	3	32
4422	LAHOM	881122	1530	881129	1330	881206		1	2.35	4103.0	8.6	5.52	3	3134
4460	LAHOM	881206	1200	881213	1600	890102		5	0.67	1113.8	23.9	3.46	3	

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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4345	LACHS	881025	0.99	1.18	550.0	4.79	20.1	7.7	-0.005	0.192	-0.004	-0.032	-0.006	0.773	0.696	0.140	0.104	0.012	0.057	0.017
4394	LACHS	881107	0.93	1.31	575.0	4.92	15.6	5.8	0.012	0.395	-0.025	-0.092	-0.024	0.357	0.583	0.084	0.220	0.022	0.051	0.030
4385	LACHS	881115	0.94	1.13	579.0	5.21	10.8	7.9	0.014	0.796	-0.018	-0.071	-0.030	0.405	1.058	0.146	0.441	0.035	0.302	0.069
4428	LACHS	881122	0.97	1.15	575.0	5.09	12.3	7.5	0.006	0.886	-0.027	-0.040	-0.024	0.205	0.862	0.134	0.490	0.029	0.105	0.061
4449	LACHS	881206	1.02	1.24	575.0	4.62	29.1	9.5	0.006	0.087	-0.013	0.017	-0.028	0.655	1.065	0.130	0.039	0.017	0.035	0.004
4461	LACHS	881213	1.03	1.12	575.0	4.41	40.6	22.3	0.012	1.498	-0.015	0.025	-0.037	1.300	1.906	0.261	0.821	0.043	0.068	0.100
4493	LACHS	881220	0.97	1.40	550.0	4.87	16.5	6.4	0.008	0.491	-0.006	-0.032	-0.028	0.378	0.784	0.124	0.284	0.029	0.034	0.036
4494	LACHS	881227	0.88	1.26	550.0	5.72		5.1	0.007	0.289	-0.006	0.174	-0.027	0.418	0.893	0.478	0.164	0.119	0.059	0.037
3987	LAHOM	880628	1.07	0.98	330.0	4.16	79.5	35.3	0.029	0.531	-0.003	-0.014	-0.007	3.593	1.923	0.159	0.314	0.042	0.207	0.053
4034	LAHOM	880705	1.06	1.09	500.0	4.48	41.1	15.3	0.014	0.391	-0.005	-0.059	-0.025	0.983	1.319	0.072	0.192	0.030	0.073	0.029
4035	LAHOM	880712	1.03	1.04	550.0	4.57	37.2	19.1	0.029	0.699	-0.005	-0.060	-0.024	2.048	1.840	0.073	0.447	0.059	0.582	0.111
4048	LAHOM	880719	1.04	1.00	330.0	4.28	62.7	26.6	0.028	0.163	-0.004	-0.081	-0.023	2.192	2.183	0.191	0.076	0.041	0.271	0.032
4086	LAHOM	880726	1.02	1.04	550.0	4.36	51.3	23.6	0.025	0.232	-0.002	0.029	-0.050	2.266	2.117	0.306	0.132	0.033	0.341	0.042
4100	LAHOM	880802	1.00	1.08	550.0	4.32	56.2	21.0	0.015	0.072	-0.003	0.035	-0.030	1.218	2.032	0.238	0.022	0.021	0.053	0.010
4115	LAHOM	880809	0.99	1.16	550.0	4.74	23.2	8.1	-0.014	0.112	-0.004	0.037	-0.021	0.621	0.756	0.105	0.064	0.014	0.047	0.012
4134	LAHOM	880816	1.01	1.14	550.0	4.40	47.3	17.8	0.016	0.181	-0.003	0.041	-0.037	1.483	1.621	0.226	0.111	0.021	0.103	0.024
4191	LAHOM	880823	1.01	1.09	550.0	4.24	60.1	28.0	0.032	0.191	-0.003	0.039	-0.018	2.215	2.834	0.353	0.134	0.024	0.333	0.030
4176	LAHOM	880830	0.95	1.25	550.0	5.02	14.7	3.9	0.003	0.119		-0.054	-0.035	0.309	0.327	0.056	0.062	0.017	-0.018	0.006
4228	LAHOM	880906	1.01	1.27	550.0	4.86	18.7	5.3	0.008	0.021	-0.015	0.057	-0.020	0.377	0.533	0.093	0.015	0.010	-0.010	-0.002
4195	LAHOM	880913	0.96	1.15	550.0	4.67	25.6	10.3	0.023	0.199	-0.003	0.036	-0.019	0.967	0.837	0.218	0.115	0.022	0.049	0.016
4254	LAHOM	880920	9999	9999																
4282	LAHOM	880927	1.01	1.12	550.0	4.44	40.0	15.8	0.015	0.134	-0.059	0.042	-0.011	1.115	1.397	0.167	0.068	0.025	0.051	0.011
4298	LAHOM	881004	1.01	1.07	450.0	4.04	96.2	44.0	0.026	0.359	-0.057	0.047	-0.014	3.401	4.103	0.474	0.186	0.056	0.443	0.040
4318	LAHOM	881018	1.01	1.01	550.0	4.39	47.5	29.6	0.030	0.689	-0.082	-0.026	-0.009	2.983	3.200	0.501	0.495	0.043	0.720	0.087
4351	LAHOM	881025	1.09	1.16	575.0	4.67	26.0	9.2	0.006	0.082	-0.004	0.041	-0.009	0.769	0.887	0.114	0.045	0.008	0.035	0.006
4389	LAHOM	881108	0.99	1.17	575.0	4.92	15.7	7.9	0.014	0.514	-0.021	-0.083	-0.027	0.393	1.013	0.171	0.295	0.029	0.099	0.040
4401	LAHOM	881115	0.95	1.27	575.0	5.03	12.0	6.0	0.008	0.548	-0.018	-0.060	-0.039	0.269	0.760	0.095	0.303	0.030	0.119	0.043
4422	LAHOM	881122	0.92	1.12	575.0	5.23	13.5	7.3	0.013	0.623	-0.019	-0.060	-0.027	0.346	1.067	0.143	0.361	0.036	0.304	0.053
4460	LAHOM	881206	1.00	1.14	575.0	4.29	51.2	22.5	-0.006	0.221	-0.014	-0.018	-0.036	1.766	2.147	0.284	0.109	0.023	0.114	0.017

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GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
4495	LAHOM	881220	1600	881227	1600	890103		3	0.98	1666.3	24.4	4.53		
4496	LAHOM	881227	1600	890103	1600	890119		3	2.01	3457.7	8.9	4.60		33
3499	LAROS	880105	1015	880112	1100	880120	0.60	2	0.91	1570.3	26.2	4.21	3	
3524	LAROS	880112	1100	880119	1045	880125	0.51	5	1.48	2513.5	19.8	4.62		
3614	LAROS	880126	1130	880202	1110	880222	0.40	2	0.29	480.1	21.6	4.64		
3598	LAROS	880202	1110	880209	1300	880217	2.42	3	0.77	1383.5	13.5	4.52	3	
3641	LAROS	880209	1300	880217	1115	880229	0.43	3	0.55	927.7	15.7	4.48	3	
3642	LAROS	880217	1115	880223	1055	880229	0.52	2	1.16	2041.5	4.3	4.93		
3687	LAROS	880301	1205	880308	1110	880321	0.46	2	1.98	3276.8	4.2	5.06		
3688	LAROS	880308	1110	880315	1130	880321	0.58	1	1.63	2800.8	10.8	4.54	3	
3714	LAROS	880315	1130	880322	1250	880328	0.68	2	1.96	3465.4	5.0	4.92	3	
3733	LAROS	880322	1300	880329	1240	880404	0.53	2	0.15	211.2	18.7	4.58	3	
3784	LAROS	880329	1240	880405	1100	880421	0.50	3	2.11	3555.3	7.0	4.86		
3785	LAROS	880405	1100	880412	1035	880421	0.46	2	0.30	462.5	35.2	4.06	3	
3831	LAROS	880412	1035	880420	1242	880507	0.54	2	0.49	797.6	19.9	4.64	3	
3834	LAROS	880426	930	880503	930	880510	0.50	1	0.77	1311.3	10.6	4.64		
3875	LAROS	880510	1010	880517	1255	880524	0.62	1	0.07	94.5			3	
3893	LAROS	880517	1255	880524	1000	880531	0.60	1	0.23	296.9	10.9	4.71		
3936	LAROS	880531	1140	880607	945	880616	0.62	1	1.07	1688.1	6.6	4.78	3	
3962	LAROS	880614	845	880621	1115	880628	0.68	1	0.36	542.5	40.3	3.97	3	
3975	LAROS	880621	1115	880628	1035	880706	0.62	3	1.28	1990.2	5.7	4.91		
3988	LAROS	880628	1035	880705	1200	880711	0.54	2	0.45	502.0	32.7	4.05	3	21
4016	LAROS	880705	1200	880712	1030	880719	0.64	6	1.80	2953.0	4.3	4.92		
4027	LAROS	880712	1030	880719	1115	880725	0.60	3	2.10	3494.1	9.5	4.51	3	
4054	LAROS	880719	1115	880726	1340	880802	0.60	2		357.5	14.3	4.35	3	
4073	LAROS	880726	1340	880802	1050	880808	0.66	1	0.71	1248.4	12.0	4.61	3	
4116	LAROS	880802	1050	880809	955	880822	0.53	5	0.81	1374.4	23.2	4.25	3	
4117	LAROS	880809	955	880816	1025	880822	0.65	4	3.16	4969.2	4.2	4.82		
4206	LAROS	880816	1025	880823	1210	880907	0.52			674.9	18.7	4.40	3	

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									mg/l											
4495	LAHOM	881220	0.99	1.11	550.0	4.44	39.0	24.7	0.016	2.054	-0.006	-0.038	-0.026	1.316	2.233	0.277	1.155	0.064	0.238	0.155
4496	LAHOM	881227	0.93	1.38	550.0	4.88	19.0	5.7	-0.007	0.166	-0.005	-0.040	-0.025	0.422	0.808	0.141	0.102	0.021	0.067	0.014
3499	LAROS	880105	1.00	1.08	550.0	4.25	56.0	28.6	0.008	1.428	-0.057	0.040	0.142	1.366	2.183	0.158	0.796	0.047	0.066	0.094
3524	LAROS	880112	0.99	1.08	550.0	4.94	17.5	12.3	0.011	0.996	-0.007	0.015	-0.043	0.668	1.601	0.248	0.567	0.055	0.336	0.075
3614	LAROS	880126	1.01	1.03	260.0	4.81	19.5	21.4	0.015	3.100	-0.017	0.034	-0.159	0.864	1.463	0.318	1.656	0.084	0.148	0.215
3598	LAROS	880202	1.03	1.12	550.0	4.60	29.7	12.2	0.005	0.082	-0.019	0.029	-0.102	0.744	1.498	0.230	0.038	0.022	0.092	0.008
3641	LAROS	880209	1.00	1.15	550.0	4.57	29.7	15.5	0.012	0.821	-0.008	0.043	-0.075	0.860	1.672	0.261	0.445	0.040	0.158	0.056
3642	LAROS	880217	0.89	1.54	550.0	5.08	12.7	2.7	0.007	0.017	-0.008	0.035	-0.070	0.225	0.308	0.055	0.019	0.007	0.019	0.003
3687	LAROS	880301	0.91	1.46	550.0	5.03	12.5	3.9	-0.006	0.184	-0.006	0.026	-0.006	0.215	0.530	0.128	0.110	0.012		0.012
3688	LAROS	880308	1.02	1.16	550.0	4.64	26.3	12.5	0.006	0.646	-0.006	0.033	-0.006	0.635	1.412	0.147	0.357	0.037	0.127	0.051
3714	LAROS	880315	0.93	1.17	550.0	5.00	14.6	5.2	0.009	0.197	-0.026	-0.014	-0.020	0.356	0.515	0.063	0.104	0.026	0.083	0.017
3733	LAROS	880322	0.92	1.17	130.0	4.48	36.3	19.9	0.018	0.752	-0.016	-0.032	-0.016	1.054	2.735	0.529	0.489	0.072	0.267	0.070
3784	LAROS	880329	0.95	1.20	550.0	4.90	16.9	7.1	-0.006	0.278	-0.004	0.020	-0.008	0.535	0.870	0.143	0.165	0.027	0.132	0.024
3785	LAROS	880405	1.00	1.07	300.0	4.01	99.6	47.0	0.019	0.324	-0.004	0.021	-0.008	2.941	4.968	0.568	0.249	0.056	0.343	0.049
3831	LAROS	880412	0.96	1.05	400.0	4.92	16.9	14.5	0.019	0.484	-0.008	0.040	-0.007	0.836	2.515	0.760	0.278	0.089	0.257	0.051
3834	LAROS	880426	0.96	1.24	550.0	4.71	22.8	8.6	-0.008	0.111	-0.007	0.052	-0.008	0.636	0.974	0.218	0.040	0.029	0.037	0.012
3875	LAROS	880510	0.99	1.06	100.0	4.77	25.1	12.9	0.029	0.197	-0.006	0.027	-0.005	1.923	1.193	0.404	0.148	0.045	0.287	0.036
3893	LAROS	880517	0.92	1.15	150.0	4.72	28.5	12.4	0.010	0.364	-0.018	-0.044	-0.005	1.418	1.298	0.458	0.197	0.075	0.164	0.032
3936	LAROS	880531	0.89	1.35	550.0	4.68	26.5	6.8	0.009	0.086	-0.002	-0.026	-0.008	0.647	0.456	0.022	0.045	0.009	0.021	0.007
3962	LAROS	880614	1.04	0.94	350.0	4.14	89.7	39.2	0.044	0.299	-0.007	-0.024	-0.001	2.503	3.246	0.507	0.116	0.052	0.124	0.020
3975	LAROS	880621	0.97	1.27	550.0	4.82	19.9	6.1	0.019	0.107	-0.007	0.028	-0.002	0.634	0.442	0.107	0.068	0.011	-0.022	0.012
3988	LAROS	880628	1.09	1.00	330.0	4.17	79.2	33.6	0.028	0.600	-0.003	0.018	-0.008	3.142	1.919	0.172	0.267	0.052	0.162	0.042
4016	LAROS	880705	1.05	1.40	550.0	4.96	18.1	3.8	0.005	0.091	-0.007	0.032	-0.016	0.413	0.279	0.048	0.041	-0.004	-0.014	0.004
4027	LAROS	880712	1.05	1.10	550.0	4.73	25.5	8.9	-0.007	0.232	-0.006	-0.032	-0.023	0.614	0.854	0.031	0.127	0.018	0.087	0.025
4054	LAROS	880719	1.11	1.02	240.0	4.45	43.4	18.1	0.018	0.355	-0.003	-0.101	-0.021	1.361	1.483	0.039	0.220	0.026	0.143	0.036
4073	LAROS	880726	0.98	1.12	550.0	4.62	27.8	11.9	0.013	0.334	-0.011	-0.028	-0.040	0.972	1.028	0.137	0.228	0.029	0.065	0.034
4116	LAROS	880802	1.01	1.04	550.0	4.24	66.1	27.7	0.029	0.148	-0.005	0.023	-0.022	1.899	2.460	0.382	0.078	0.035	0.079	0.017
4117	LAROS	880809	1.13	1.25	550.0	4.93	18.4	4.5	-0.015	0.070	-0.005	0.049	-0.022	0.333	0.431	0.031	0.042	0.011	-0.017	0.005
4206	LAROS	880816	1.04	1.06	350.0	4.41	42.7	19.3	0.028	0.302	-0.005	-0.037	-0.026	1.700	1.566	0.112	0.268	0.057	0.129	0.036

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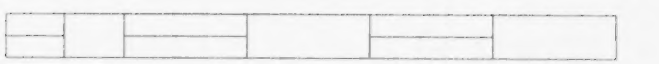
4158	LAROS	880823	1210	880830	1220	880901	0.54	1	0.09	163.8	7.7	4.78	3	
4177	LAROS	880830	1220	880906	1230	880912	0.53	4	1.78	2572.6	4.8	5.05		
4229	LAROS	880906	1230	880913	1045	880922	0.70	1	0.12	181.1	9.4	4.69	3	
4196	LAROS	880913	1045	880920	1020	880923	0.68	2	0.46	645.2	4.0	4.84		
4269	LAROS	880927	1135	881004	1130	881011	0.58	2	0.92	1568.1	13.1	4.38		
4308	LAROS	881004	1130	881011	1025	881019	0.56	1	0.60	956.5	24.2	4.12	3	
4433	LAROS	881017	1330	881025	1110	881031	0.52	1	0.03	58.5				
4346	LAROS	881025	1110	881101	1210	881109	0.53	4	1.76	3093.0	8.6	4.57		
4372	LAROS	881107	1405	881115	1120	881117	0.52	2	0.34	554.2	15.7	4.71	3	
4381	LAROS	881115	1120	881122	1105	881117	0.47	2	0.39	593.7	18.7	4.72	3	
4441	LAROS	881122	1105	881129	1400	881215	0.53	1	0.53	832.5	11.1	4.83	3	
4440	LAROS	881206	1350	881213	1230	881215	0.46	4	2.06	3503.6	9.2	4.49	3	
4463	LAROS	881213	1230	881219	1415	890102	0.46	1	0.30	512.1	37.4	4.26	3	
4498	LAROS	881219	1415	881227	1315	890104	0.50	5	3.67	6082.6	11.7	4.76		
4499	LAROS	881227	1315	890103	1300	890119	0.50	4	3.86	6560.8	6.7	4.98		

EPA State Operated Rain Network
1988 Laboratory Data

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4158	LAROS	880823	1.07	1.08	100.0	4.93	18.5	7.5	0.029	0.159	-0.004	0.035	-0.012	1.038	0.609	0.048	0.235	0.068	0.117	0.025
4177	LAROS	880830	1.00	1.16	550.0	4.62	27.2	9.2	0.003	0.034	-0.005	-0.043	-0.031	0.300	1.040	0.055	0.015	0.004	-0.018	
4229	LAROS	880906	1.05	1.06	150.0	4.79	23.1	10.7	0.033	0.144	-0.014	0.064	-0.020	0.758	1.436	0.268	0.232	0.079	0.054	0.022
4196	LAROS	880913	0.94	1.36	525.0	5.31	12.1	3.1	0.012	0.308	-0.004	0.046	-0.020	0.215	0.289	0.099	0.157	0.019	0.032	0.028
4269	LAROS	880927	0.97	1.15	550.0	4.42	41.6	15.5	0.007	0.068	-0.053	0.039	-0.017	0.948	1.459	0.111	0.049	0.014	0.074	0.007
4308	LAROS	881004	1.01	0.99	550.0	4.30	57.5	28.3	0.021	0.243	-0.081	0.041	-0.013	1.958	2.837	0.429	0.281	0.044	0.166	0.040
4433	LAROS	881017	0.94	0.86		4.77		18.1	0.042	0.558	-0.022	0.468	-0.021	0.804	1.558	0.233	0.767	0.138	0.241	0.048
4346	LAROS	881025	1.04	1.11	579.0	4.70	24.6	9.8	-0.005	0.233	-0.004	-0.031	-0.006	0.656	1.004	0.119	0.135	0.012	0.046	0.019
4372	LAROS	881107	1.01	1.08	350.0	4.78	20.6	17.0	0.017	2.086	-0.010	-0.044	-0.044	0.730	1.505	0.188	1.129	0.073	0.233	0.154
4381	LAROS	881115	1.02	1.07	400.0	4.86	13.3	21.5	0.018	2.852	-0.015	-0.064	-0.033	0.692	2.505	0.217	1.578	0.115	0.524	0.216
4441	LAROS	881122	1.05	1.12	575.0	5.02	14.0	9.9	0.005	1.371	-0.018	-0.026	-0.024	0.154	1.055	0.134	0.725	0.040	0.070	0.093
4440	LAROS	881206	0.98	1.30	575.0	4.64	27.2	8.6	0.007	0.109	-0.018	-0.027	-0.023	0.544	1.010	0.145	0.052	0.015	-0.029	0.008
4463	LAROS	881213	1.03	1.39	300.0	4.32	50.2	31.3	0.023	4.704	-0.016	-0.021	-0.038	1.695	3.131	0.395	2.579	0.124	0.173	0.324
4498	LAROS	881219	1.00	1.22	550.0	4.83	18.5	10.4	0.010	1.230	-0.005	-0.044	-0.024	0.382	1.079	0.132	0.690	0.036	0.064	0.094
4499	LAROS	881227	0.97	1.36	550.0	4.99	13.3	5.0	-0.007	0.408	-0.005	-0.046	-0.023	0.244	0.624	0.082	0.228	0.019	0.035	0.031

Maryland



□ Major city (for reference)

* EPA Acid Rain Site

MARYLAND

SITE	SITE NAME	NEAREST CITY	COUNTY	SAMPLING PERIOD[1] BEGIN	END	#SAMPLES	%NON-VOID[2]
MDHUR	Hurlock	Hurlock	Dorchester	27 MAR 84	1 AUG 84	---	---
MDRGP	Rocky Gap	Cumberland	Allegany			43	95.4
MD3EC	The Elms	Lexington Pk	St Marys			46	100.0

(1) "BEGIN" was JAN 88 and "END" was DEC 88 unless otherwise noted. For sites which were not operational during 1988, the date range of operation is given.

(2) Percentage of samples received which were not voided by GGC due to contamination.

Figure 2-1 (continued)
Site: MD3EC
PPTN Data Plots, Jan 1988 - Dec 1988

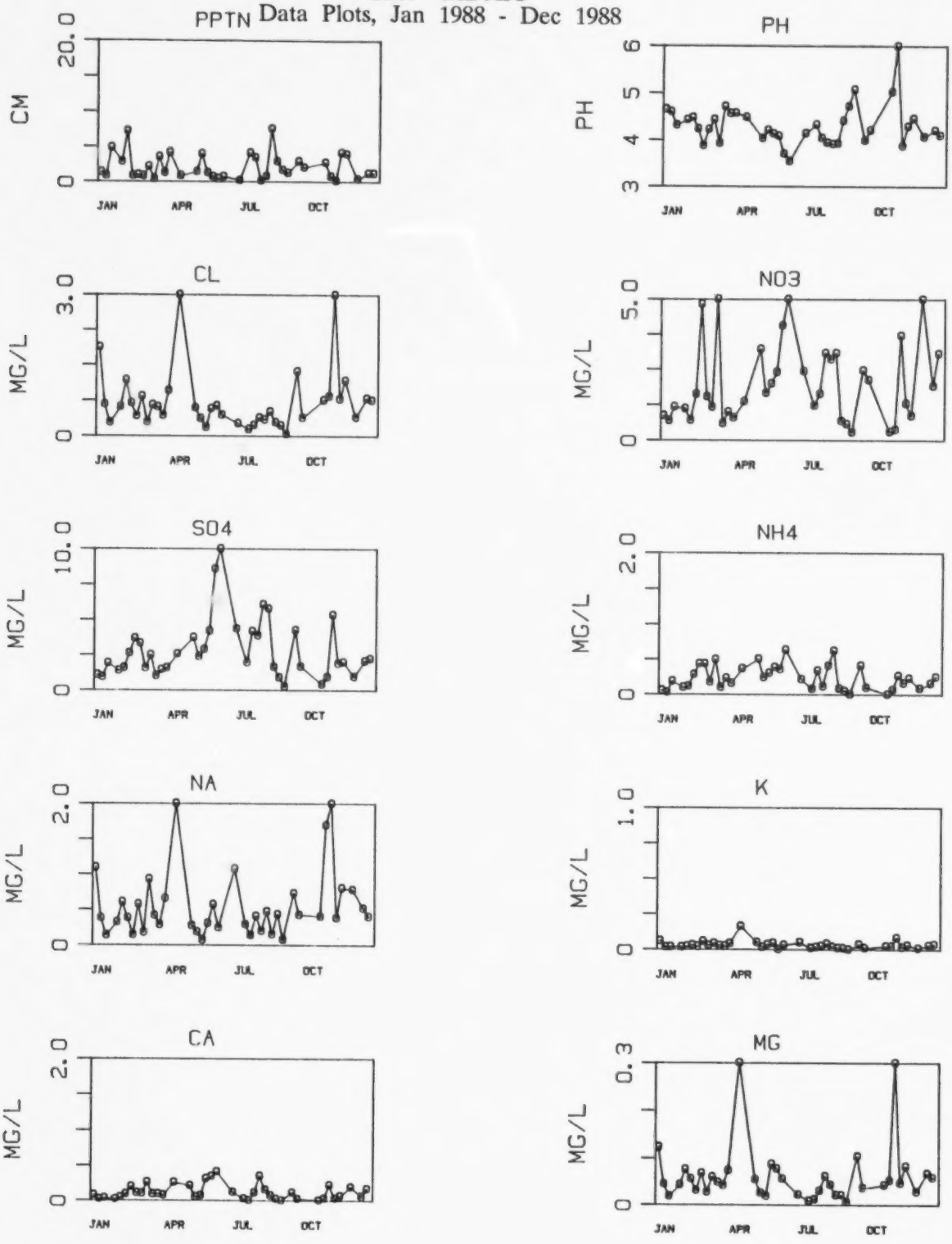
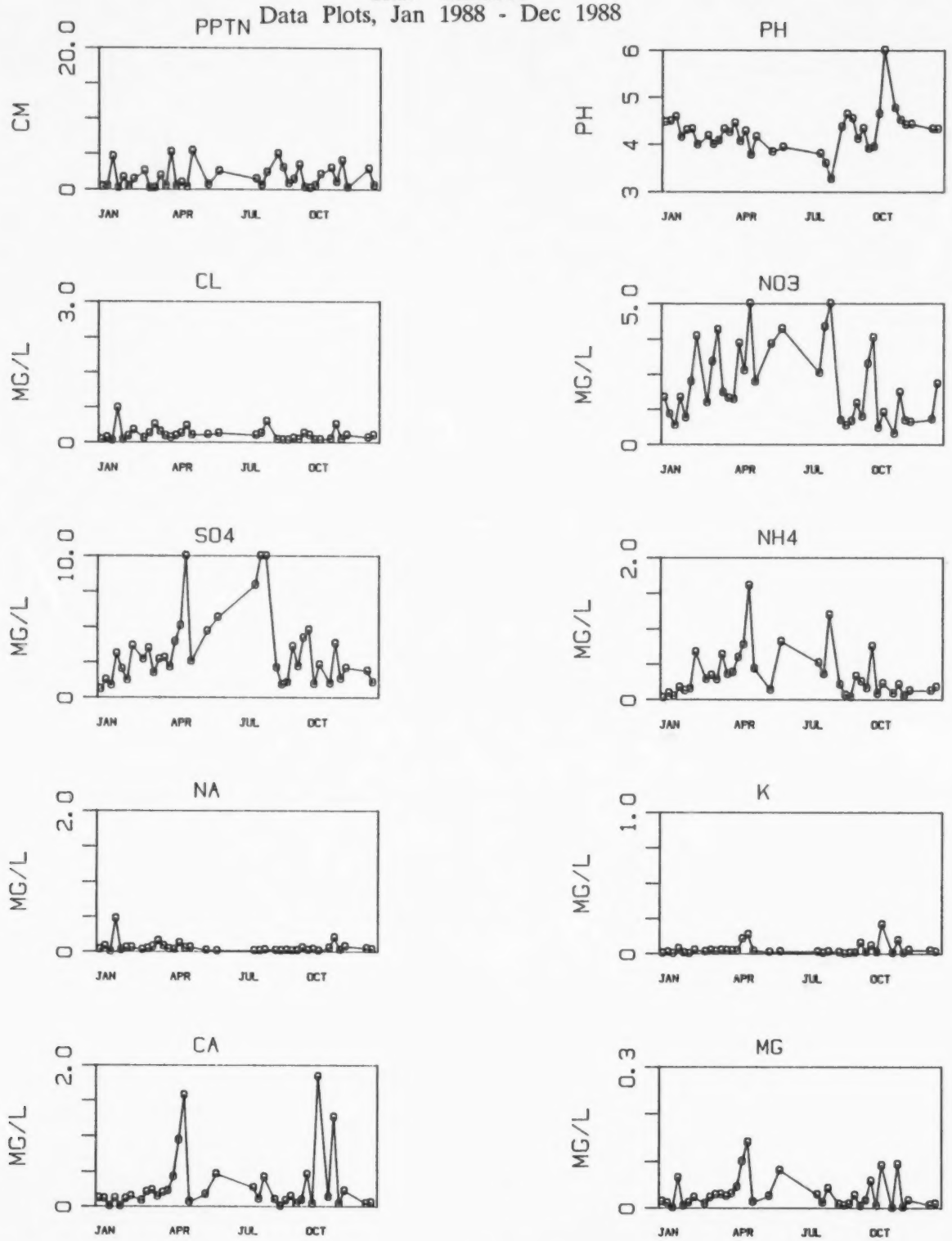


Figure 2-1 (continued)
Site: MDRGP
Data Plots, Jan 1988 - Dec 1988



MD88

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EPA State Operated Rain Network
1988 Sampling and Field Data

GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3501	MD3EC	880105	945	880112	952	880120	1.50	1	0.53	1105.0	16.5	4.81	3	
3533	MD3EC	880112	952	880119	957	880127	0.51	2	0.33	574.0	15.3	4.69		
3546	MD3EC	880119	957	880126	958	880201	3.49	6	1.91	3314.0	22.6	4.46		33
3600	MD3EC	880202	943	880209	939	880217	0.50	3	1.10	905.0	19.2	4.64		
3620	MD3EC	880209	939	880216	926	880223	0.49	4	2.82	4929.0	18.9	4.51		
3651	MD3EC	880216	926	880223	952	880302	0.50	1	0.33	604.0	29.9	4.31	3	33
3664	MD3EC	880223	952	880301	946	880309	0.52	4	0.37	692.0	60.3	3.90		
3673	MD3EC	880301	946	880308	953	880315	0.51	1	0.30	523.0	30.8	4.28	3	
3699	MD3EC	880308	953	880315	926	880323	0.49	3	0.85	1497.0	16.1	4.58	3	
3721	MD3EC	880315	926	880322	920	880329	2.51	3	0.13	256.0	59.0	4.00	3	
3735	MD3EC	880322	920	880329	937	880405	0.52	1	1.38	2447.0	10.7	4.75		
3764	MD3EC	880329	937	880405	902	880415	0.51	1	0.50	890.0	12.9	4.68		
3786	MD3EC	880405	902	880412	905	880421	0.50	3	1.64	2834.0	16.9	4.66		
3805	MD3EC	880412	905	880419	902	880426	0.49	2	0.08	146.0			13	34
3823	MD3EC	880419	902	880426	905	880503	0.52	1	0.33	623.0	44.7	4.56		
3843	MD3EC	880426	905	880503	940	880511	0.51	2	0.20	411.0	73.2	3.95	3	3233
3863	MD3EC	880503	940	880510	910	880519	0.53	5	1.30	2325.0	25.2	4.40	3	3334
3877	MD3EC	880510	910	880517	905	880524	0.52	5	0.56	986.0	44.3	4.07	3	33
3895	MD3EC	880517	905	880524	940	880531	0.54	6	1.56	2725.0	23.9	4.31	3	
3915	MD3EC	880524	940	880531	915	880607	0.53	3	0.50	898.0	32.2	4.21	3	
3938	MD3EC	880531	915	880607	911	880618	0.54	3	0.27	476.0	42.9	4.13	3	
3945	MD3EC	880607	911	880614	902	880622	0.53	1	0.17	307.0	92.9	3.76	3	
3964	MD3EC	880614	902	880621	915	880629	0.55	1	0.27	455.0	142.9	3.57	3	
3976	MD3EC	880621	915	880628	927	880706	0.54	2	0.89	1501.0	66.4	3.95	3	34
4001	MD3EC	880705	904	880712	942	880718	0.55	1	0.06	125.0			3	
4029	MD3EC	880712	942	880719	930	880725	0.52	3	1.55	2494.0	32.9	4.25		34
4055	MD3EC	880719	930	880726	901	880802	0.54	4	1.62	2897.0	21.2	4.44		
4087	MD3EC	880726	901	880802	1035	880809	0.52	3	1.35	2327.0	43.2	4.26		
4101	MD3EC	880802	1030	880809	943	880815	0.52	3	0.05	93.0			3	
4126	MD3EC	880809	943	880816	901	880824	0.49	1	0.30	488.0	63.2	3.98	3	

EPA State Operated Rain Network
1988 Laboratory Data

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3501	MD3EC	880105	1.02	1.16	500.0	4.65	24.7	15.6	-0.002	1.875	-0.066	0.033	-0.118	0.853	1.071	0.051	1.094	0.059	0.076	0.123
3533	MD3EC	880112	1.03	1.14	350.0	4.59	27.8	12.1	-0.003	0.658	-0.006	0.021	-0.054	0.677	0.920	0.021	0.372	0.016	0.016	0.044
3546	MD3EC	880119	1.00	1.15	540.0	4.31	51.6	20.3	0.009	0.280	-0.005	0.038	-0.044	1.169	1.907	0.184	0.134	0.016	0.030	0.018
3600	MD3EC	880202	1.06	1.10	500.0	4.42	43.3	17.6	0.009	0.611	-0.020	0.036	-0.134	1.102	1.363	0.098	0.319	0.014	0.014	0.043
3620	MD3EC	880209	1.05	1.08	490.0	4.47	40.6	18.5	0.008	1.170	-0.017	0.034	-0.168	0.691	1.567	0.113	0.600	0.020	0.043	0.076
3651	MD3EC	880216	1.02	1.11	290.0	4.23	59.6	27.7	0.013	0.689	-0.008	0.053	-0.008	1.615	2.620	0.280	0.376	0.029	0.091	0.055
3664	MD3EC	880223	0.96	1.08	525.0	3.87	132.0	57.5	0.019	0.418	-0.004	0.059	-0.012	4.825	3.675	0.434	0.140	0.019	0.198	0.030
3673	MD3EC	880301	1.04	1.11	350.0	4.22	61.2	30.8	0.017	0.831	-0.005	0.239	-0.013	1.528	3.319	0.434	0.571	0.055	0.108	0.067
3699	MD3EC	880308	0.97	1.16	520.0	4.43	39.9	16.4	0.009	0.291	-0.007	0.024	-0.006	1.157	1.552	0.171	0.176	0.028	0.102	0.027
3721	MD3EC	880315	1.15	1.13	130.0	3.92	115.5	56.4	0.027	0.650	-0.026	1.721	-0.018	6.836	2.489	0.494	0.926	0.042	0.260	0.060
3735	MD3EC	880322	0.98	1.26	475.0	4.71	23.8	9.9	0.008	0.602	-0.015	0.105	-0.016	0.575	1.004	0.098	0.415	0.026	0.094	0.049
3764	MD3EC	880329	0.98	1.19	525.0	4.56	30.3	13.5	0.007	0.429	-0.008	0.042	-0.011	0.993	1.435	0.228	0.283	0.023	0.093	0.042
3786	MD3EC	880405	0.99	1.12	450.0	4.57	26.2	15.7	-0.006	0.952	-0.004	0.048	-0.007	0.781	1.571	0.153	0.652	0.041	0.076	0.073
3805	MD3EC	880412	1.04	1.09	150.0	4.04	95.2	44.9	0.048	0.648	-0.012	0.046	-0.005	2.845	4.765	0.536	0.437	0.128	0.239	0.084
3823	MD3EC	880419	1.04	1.06	450.0	4.48	33.2	43.9	0.030	7.361	-0.008	0.029	0.136	1.357	2.571	0.365	3.985	0.163	0.257	0.402
3843	MD3EC	880426	0.96	1.10	240.0	3.82	140.6	74.3	0.034	1.262	-0.006	0.145	-0.009	5.671	6.857	0.990	0.759	0.205	0.589	0.174
3863	MD3EC	880503	1.02	1.11	540.0	4.29	51.5	27.2	0.011	1.187	-0.005	0.060	-0.005	1.504	2.659	0.293	0.645	0.311	0.069	0.086
3877	MD3EC	880510	1.00	1.08	525.0	4.03	94.7	43.6	0.025	0.590	-0.006	-0.018	-0.005	3.223	3.746	0.502	0.273	0.049	0.212	0.054
3895	MD3EC	880517	1.01	1.13	525.0	4.21	63.5	26.2	-0.008	0.365	-0.022	0.055	-0.005	1.661	2.374	0.239	0.183	0.015	0.051	0.026
3915	MD3EC	880524	1.01	1.10	500.0	4.13	76.1	31.8	0.017	0.184	-0.003	0.069	-0.015	1.994	2.886	0.302	0.069	0.035	0.069	0.019
3938	MD3EC	880531	1.04	1.05	250.0	4.08	87.9	41.4	0.023	0.578	-0.004	0.066	-0.015	2.406	4.209	0.386	0.304	0.045	0.311	0.087
3945	MD3EC	880607	1.06	1.06	170.0	3.70	201.1	89.6	0.036	0.636	-0.002	0.560	-0.001	4.065	8.581	0.357	0.570	-0.004	0.343	0.077
3964	MD3EC	880614	1.08	0.94	260.0	3.54	330.1	142.8	0.052	0.440	-0.007	0.086	-0.001	6.634	12.599	0.635	0.242	0.032	0.411	0.056
3976	MD3EC	880621	1.06	0.96	515.0	3.91	144.2	63.6	0.032	0.328	-0.007	-0.024	-0.002	2.704	6.613	0.605	0.149	0.034	0.289	0.039
4001	MD3EC	880705	1.04	1.02	120.0	4.14	83.2	39.0	0.048	0.260	-0.009	0.161	-0.014	2.426	4.367	0.212	1.073	0.049	0.116	0.022
4029	MD3EC	880712	1.05	1.03	500.0	4.14	84.9	33.0	0.020	0.176	-0.006	-0.050	-0.025	1.632	3.139	0.228	0.103	0.013	0.058	0.015
4055	MD3EC	880719	1.15	1.12	500.0	4.33	54.7	20.5	0.013	0.143	-0.003	0.322	-0.021	1.222	1.940	0.079	0.288	0.010	0.023	0.009
4087	MD3EC	880726	1.05	1.02	520.0	4.04	99.2	41.7	0.022	0.230	-0.003	0.021	-0.048	1.633	4.196	0.339	0.136	0.017	-0.030	0.012
4101	MD3EC	880802	1.08	1.03	90.0	3.94	121.3	51.8	0.038	0.388	-0.003	0.485	-0.027	3.088	3.879	0.116	0.408	0.024	0.115	0.030
4126	MD3EC	880809	1.05	0.99	200.0	3.91	135.7	60.8	0.032	0.344	-0.005	0.036	-0.028	2.865	6.072	0.409	0.198	0.041	0.350	0.061

EPA State Operated Rain Network
1988 Sampling and Field Data

GGC ID	Site Code	Begin Day	Begin Time	End Day	End Time	Date Rec'd	Type	# Rain Events	Precip inches	Field Wt gm	Field Cond µmho/cm	Field pH	Comment Codes 1	Comment Codes 2
4145	MD3EC	880816	901	880823	903	880829	0.48	4	2.97	5019.0	59.9	4.04		
4207	MD3EC	880823	903	880830	910	880907	0.49	2	1.13	1982.0	17.6	4.59	3	
4178	MD3EC	880830	910	880906	912	880912	0.47	1	0.65	1115.0	9.9	4.87		
4236	MD3EC	880906	912	880913	902	880922	0.49	1	0.49	837.0	53.0	5.15		
4242	MD3EC	880913	902	880920	906	880923	0.48	1	0.05	95.0				34
4264	MD3EC	880920	906	880927	910	881005	0.50	2	1.15	2107.0	53.1	4.07		
4309	MD3EC	880927	910	881004	901	881024	0.47	2	0.80	1499.0	26.5	4.32	3	
4347	MD3EC	881018	916	881025	907	881109	0.45	3	1.25	2169.0	16.8	4.59	3	34
4328	MD3EC	881025	907	881101	912	881109		1	1.08	1860.0	6.8	5.05		
4360	MD3EC	881101	912	881108	950	881116	0.46	2	0.30	684.0	9.4	6.40	3	33
4377	MD3EC	881108	950	881115	915	881117	0.47	1	0.05	66.0				
4402	MD3EC	881115	915	881122	952	881129	0.46	3	1.64	2815.0	26.1	4.48		
4427	MD3EC	881122	952	881129	910	881206	0.45	2	1.55	2719.0	21.5	4.53		
4451	MD3EC	881206	932	881213	952	881219	3.45	1	0.15	299.0	39.8	4.19	3	
4501	MD3EC	881220	956	881227	945	890119	0.45	3	0.48	810.0	31.1	4.25		
4502	MD3EC	881227	945	890103	956	890119	2.46	3	0.48	812.0	38.2	4.22		
3500	MDRGP	880105	930	880112	930	880120	1.00	1	0.15	265.0	13.0	4.49		
3544	MDRGP	880112	930	880119	930	880129		1		329.0	16.4	4.40	3	
3556	MDRGP	880119	930	880126	930	880202	2.00	4		3098.0	10.3	4.52		
3585	MDRGP	880126	930	880202	930	880211		2	0.08	116.0			3	
3599	MDRGP	880202	930	880209	930	880217		2	0.65	1251.0	21.5	4.27		
3629	MDRGP	880209	930	880216	930	880224	3.00			294.0	21.9	4.29		
3655	MDRGP	880216	930	880223	930	880303	2.00	2		964.0	46.1	4.00	3	33
3672	MDRGP	880301	930	880308	930	880315		2		1734.0	30.0	4.17		
3700	MDRGP	880308	930	880315	930	880323	2.00	4		128.0			3	
3718	MDRGP	880315	930	880322	930	880329	1.00	2	0.08	145.0			3	
3739	MDRGP	880322	930	880329	930	880406	3.00	5		1293.0			3	
3765	MDRGP	880329	930	880405	930	880415		2	0.19	395.0	25.8	4.25		
3771	MDRGP	880405		880412		880418		3		3529.0	17.0			33

EPA State Operated Rain Network
1988 Laboratory Data

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4145	MD3EC	880816	1.04	1.07	520.0	3.92	128.5	56.7	0.026	0.515	-0.004	0.264	-0.025	3.086	5.773	0.623	0.474	0.019	0.155	0.043
4207	MD3EC	880823	0.98	1.12	500.0	4.41	45.8	16.7	0.020	0.285	-0.006	-0.038	-0.026	0.675	1.640	0.083	0.130	0.010	0.071	0.021
4178	MD3EC	880830	1.32	1.29	500.0	4.72	22.7	9.4	0.009	0.223	-0.006	0.737	-0.030	0.566	0.890	0.051	0.431	0.009	0.023	0.021
4236	MD3EC	880906	1.37	1.32	375.0	5.08	13.9	3.2	0.003	0.037	-0.011	0.165	-0.021	0.280	0.259	-0.008	0.074	-0.003	-0.011	0.006
4242	MD3EC	880913	1.03	1.01	50.0	4.07		39.1	0.023	0.572	-0.006	0.042	-0.021	1.484	3.416	0.113	0.260	-0.014	0.113	0.031
4264	MD3EC	880920	1.00	1.09	500.0	3.99	100.2	48.4	0.016	1.366	-0.004	0.068	-0.018	2.471	4.287	0.415	0.729	0.036	0.115	0.104
4309	MD3EC	880927	1.05	1.15	500.0	4.21	59.9	26.1	0.017	0.383	-0.081	0.416	-0.012	2.134	1.675	0.099	0.426	0.012	0.022	0.036
4347	MD3EC	881018	1.06	1.06	550.0	4.52	34.8	16.9	0.009	0.920	-0.004	-0.031	-0.007	0.866	1.423	0.125	0.478	0.022	0.056	0.064
4328	MD3EC	881025	1.17	1.07	475.0	5.03	12.9	6.6	-0.012	0.757	-0.056	0.033	-0.005	0.300	0.425	-0.005	0.403	0.024	-0.017	0.043
4360	MD3EC	881101	0.99	1.38	350.0	6.23		7.8	0.016	0.838	-0.014	1.059	-0.050	0.377	0.924	0.065	1.695	0.023	0.030	0.052
4377	MD3EC	881108	1.03	1.06	150.0	3.87	133.3	74.1	0.028	4.281	-0.012	0.374	-0.036	3.713	5.351	0.268	2.513	0.083	0.225	0.300
4402	MD3EC	881115	1.01	1.09	550.0	4.29	56.4	23.7	0.008	0.785	-0.017	-0.061	-0.039	1.300	1.890	0.163	0.381	0.018	0.029	0.047
4427	MD3EC	881122	1.06	1.15	500.0	4.46	38.5	19.8	0.013	1.170	-0.026	0.305	-0.025	0.864	1.985	0.229	0.803	0.031	0.066	0.083
4451	MD3EC	881206	1.03	1.18	130.0	4.07	85.6	37.2	0.035	0.394	-0.006	1.545	-0.022	5.156	0.959	0.086	0.779	0.011	0.194	0.029
4501	MD3EC	881220	0.96	1.12	390.0	4.21	63.7	27.7	0.021	0.795	-0.004	-0.053	-0.021	1.921	2.082	0.158	0.516	0.030	0.060	0.067
4502	MD3EC	881227	0.95	1.10	380.0	4.10	83.7	35.6	0.022	0.754	-0.004	-0.055	-0.020	3.075	2.240	0.252	0.403	0.037	0.171	0.059
3500	MDRGP	880105	0.96	1.20	100.0	4.47	35.7	12.8	0.008	0.053	-0.063	0.017	-0.112	1.675	0.580	0.026	0.028	0.004	0.119	0.014
3544	MDRGP	880112	1.04	1.16	260.0	4.49	36.7	13.5	0.013	0.099	-0.005	0.030	0.151	1.067	1.225	0.090	0.075	0.011	0.114	0.010
3556	MDRGP	880119	1.10	1.23	550.0	4.58	28.8	9.4	-0.002	0.032	-0.005	0.021	0.149	0.676	0.835	0.048	-0.009	-0.005	-0.009	-0.003
3585	MDRGP	880126	1.01	1.10	110.0	4.15	73.9	32.3	0.033	0.732	-0.018	-0.008	-0.008	1.671	3.094	0.172	0.472	0.035	0.117	0.065
3599	MDRGP	880202	1.03	1.14	550.0	4.30	53.0	19.8	0.008	0.048	-0.020	0.040	-0.133	0.948	2.003	0.126	0.019	0.006	0.001	0.004
3629	MDRGP	880209	1.04	1.10	220.0	4.32	52.7	20.5	0.014	0.126	-0.012	0.042	-0.136	2.233	1.215	0.152	0.053	-0.013	0.109	0.012
3655	MDRGP	880216	0.97	1.09	550.0	3.99	100.7	45.8	0.007	0.257	-0.007	0.030	-0.007	3.851	3.651	0.669	0.056	0.024	0.146	0.023
3672	MDRGP	880301	0.97	1.12	550.0	4.18	67.4	27.5	0.015	0.090	-0.005	0.021	0.084	1.489	2.681	0.283	0.023	0.013	0.084	0.009
3700	MDRGP	880308	0.97	1.08	100.0	4.00	98.8	43.1	0.032	0.190	-0.007	0.022	0.064	2.956	3.470	0.343	0.041	0.023	0.210	0.023
3718	MDRGP	880315	0.98	1.09	150.0	4.08	83.5	36.2	0.022	0.378	-0.028	-0.013	-0.020	4.075	1.731	0.282	0.070	0.017	0.233	0.029
3739	MDRGP	880322	0.94	1.13	550.0	4.32	48.9	23.9	0.020	0.229	-0.011	-0.038	-0.015	1.842	2.685	0.634	0.150	0.024	0.146	0.030
3765	MDRGP	880329	0.98	1.16	330.0	4.25	54.9	24.7	0.012	0.134	-0.008	0.026	-0.011	1.651	2.790	0.356	0.079	0.022	0.199	0.025
3771	MDRGP	880405	1.03	1.25	550.0	4.45	38.1	16.3	0.010	0.097	-0.007	0.026	-0.010	1.606	2.143	0.384	0.036	0.021	0.226	0.031

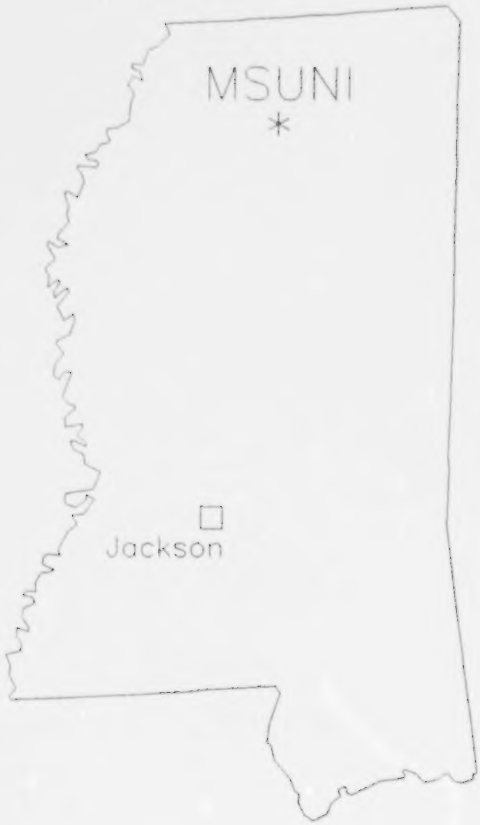
EPA State Operated Rain Network
1988 Sampling and Field Data

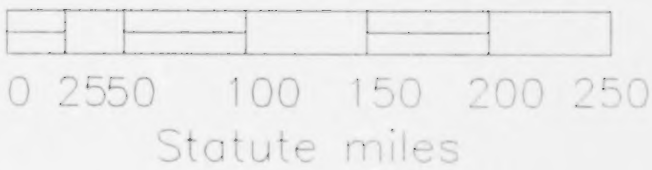
GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3809	MDRGP	880412	930	880419	930	880428		3		329.0	42.8	4.06		
3810	MDRGP	880419	930	880426	930	880428		1		640.0	38.4	4.15	3	33
3842	MDRGP	880426	930	880503	930	880511	3.00	7		229.0		3.75	3	33
3855	MDRGP	880503	930	880510	930	880517		4		3640.0	28.7	4.14	3	
3876	MDRGP	880510	930	880517	930	880524	3.00			127.0			3	3399
3894	MDRGP	880517	930	880524	930	880531		7		7550.0	32.4	4.01	3	32
3906	MDRGP	880524	930	880531	930	880604		2		443.0	59.4	3.72	3	
3946	MDRGP	880607	930	880614	930	880622	3.00			1720.0	57.2	3.79	3	
4009	MDRGP	880705	930	880712	930	880719		1		172.0			13	333499
4028	MDRGP	880712	930	880719	930	880725		2		298.0	117.0	3.46	3	34
4049	MDRGP	880719	930	880726	930	880801		4		3101.0	33.2	3.95	3	34
4090	MDRGP	880726	930	880802	930	880810		1		995.0	73.4	3.64	3	
4107	MDRGP	880802	930	880809	930	880817		1		410.0	108.9	3.55	3	
4118	MDRGP	880809	930	880816	930	880822		2	0.95	1665.0	229.0	3.27	3	33
4150	MDRGP	880816	930	880823	930	880830		3	1.44	2545.0	71.6	3.82		34
4215	MDRGP	880823	930	880830	930	880907		4	1.95	3310.0				
4329	MDRGP	880830	930	880906	930	881109		3		2078.0				
4235	MDRGP	880906	930	880913	930	880922		1		581.0	13.1	4.55	3	
4240	MDRGP	880913	930	880920	930	880923		2	0.56	943.0	33.3	4.15		
4283	MDRGP	880920	930	880927	930	881011		2	1.34	2423.0	20.7	4.34		
4290	MDRGP	880927	930	881004	930	881011		1	0.12	225.0	51.1	3.94		
4299	MDRGP	881004	930	881011	930	881020		1	0.07	89.0			3	
4310	MDRGP	881011	930	881018	930	881024		2		381.0	13.0	4.51	3	
4319	MDRGP	881018	930	881025	930	881031		3		1434.0	14.0	6.41	3	
4361	MDRGP	881101	930	881108	930	881116		2	1.18	2058.0				33
4395	MDRGP	881108	930	881115	930	881117		1	0.42	615.0	24.6	4.46	3	
4399	MDRGP	881115	930	881122	930	881129		3	1.59	2789.0				
4429	MDRGP	881122	930	881129	930	881209		1	0.12	213.0	18.7	4.38	3	
4504	MDRGP	881220	930	881227	930	890103		2	1.13	99.0				21
4505	MDRGP	881227	930	890103	930	890119	1.00	3	0.23	383.0				

EPA State Operated Rain Network
1988 Laboratory Data

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3809	MDRGP	880412	1.01	1.07	200.0	4.06	90.8	42.1	0.028	0.141	-0.011	0.043	-0.004	3.601	3.946	0.593	0.027	0.020	0.424	0.045
3810	MDRGP	880419	0.99	1.10	500.0	4.28	55.8	33.4	0.034	0.189	-0.011	0.030	-0.004	2.633	5.078	0.774	0.120	0.105	0.939	0.100
3842	MDRGP	880426	0.98	1.08	200.0	3.78	161.4	88.4	0.053	0.349	-0.006	0.045	-0.009	7.418	9.991	1.605	0.052	0.134	1.570	0.140
3855	MDRGP	880503	0.95	1.19	550.0	4.16	69.5	27.9	0.013	0.154	-0.005	0.042	-0.004	2.225	2.548	0.435	0.060	0.019	0.066	0.013
3876	MDRGP	880510	9999	9999	140.0	3.67														
3894	MDRGP	880517	1.00	1.12	550.0	4.16	70.1	31.3	0.010	0.083	-0.020	-0.045	-0.005	2.219	3.436	0.489	0.025	0.043	0.198	0.035
3906	MDRGP	880524	1.00	1.07	370.0	3.84	149.3	59.5	0.030	0.159	-0.004	0.051	-0.018	3.574	4.685	0.136	0.016	0.011	0.172	0.026
3946	MDRGP	880607	1.01	1.04	550.0	3.94	118.2	57.4	0.030	0.190	-0.002	0.041	-0.001	4.114	5.653	0.819	0.009	0.014	0.461	0.081
4009	MDRGP	880705	9999	9999	170.0	5.16														
4028	MDRGP	880712	1.08	0.97	230.0	3.60	281.3	121.2	0.068	0.278	-0.006	-0.049	-0.025	4.955	11.810	0.654	0.051	0.037	0.406	0.051
4049	MDRGP	880719	1.10	1.02	550.0	4.14	81.9	32.3	0.013	0.073	-0.004	-0.084	-0.022	1.363	3.233	0.169	0.014	0.007	0.029	0.004
4090	MDRGP	880726	1.05	0.98	550.0	3.80	173.0	75.7	0.037	0.147	-0.003	0.021	-0.045	2.544	7.933	0.518	0.012	0.013	0.272	0.029
4107	MDRGP	880802	1.06	0.96	345.0	3.60	266.9	115.4	0.030	0.198	-0.004	-0.026	-0.017	4.186	10.427	0.359	0.013	0.005	0.106	0.011
4118	MDRGP	880809	1.08	1.33	550.0	3.27	596.2	183.6	0.089	0.443	-0.005	0.037	-0.023	8.675	24.799	1.194	0.027	0.015	0.418	0.042
4150	MDRGP	880816	1.05	0.97	550.0	3.82	167.0	72.3	0.028	0.182	-0.005	-0.016	-0.020	3.958	6.310	0.449	0.030	0.016	0.233	0.042
4215	MDRGP	880823	0.97	1.11	550.0	4.37	46.1	18.5	-0.009	0.057	-0.010	-0.057	-0.039	0.852	2.096	0.212	0.017	0.010	0.099	0.008
4329	MDRGP	880830	1.19	1.09	575.0	4.64	28.8	9.8	0.014	0.047	-0.054	0.034	-0.005	0.668	0.899	0.066	0.013	-0.006	-0.017	0.005
4235	MDRGP	880906	1.08	1.15	550.0	4.55	28.8	11.4	0.008	0.046	-0.012	0.047	-0.021	0.828	1.052	0.032	0.021	0.005	0.082	0.009
4240	MDRGP	880913	1.00	1.09	550.0	4.12	76.2	33.2	0.018	0.087	-0.006	0.048	-0.021	1.464	3.609	0.332	0.015	0.007	0.143	0.027
4283	MDRGP	880920	1.03	1.03	550.0	4.34	47.2	21.5	0.006	0.064	-0.059	0.096	-0.010	0.979	2.197	0.255	0.015	0.076	0.041	0.004
4290	MDRGP	880927	1.02	1.04	200.0	3.91	125.7	52.4	0.024	0.193	-0.061	0.047	-0.009	2.870	4.230	0.163	0.056	0.010	0.091	0.016
4299	MDRGP	881004	0.91	1.17	100.0	3.95	98.9	48.3	0.027	0.149	-0.056	0.025	-0.015	3.799	4.793	0.754	0.021	0.058	0.461	0.058
4310	MDRGP	881011	1.03	1.15	330.0	4.65	26.6	9.3	-0.016	0.054	-0.081	0.036	-0.012	0.586	0.946	0.086	0.034	0.012	0.036	0.005
4319	MDRGP	881018	0.62	1.02	550.0	6.48		12.5	0.029	0.058	0.107	0.032	-0.009	1.137	2.303	0.229	0.013	0.206	1.835	0.091
4361	MDRGP	881101	0.95	1.24	579.0	4.77	20.4	7.3	0.012	0.075	-0.014	-0.049	-0.049	0.379	0.984	0.090	0.052	0.005	0.134	-0.005
4395	MDRGP	881108	0.99	1.12	575.0	4.52	34.3	22.6	0.025	0.383	-0.026	-0.095	-0.023	1.852	3.830	0.216	0.200	0.094	1.258	0.093
4399	MDRGP	881115	0.98	1.16	575.0	4.42	41.2	14.5	0.009	0.075	-0.019	-0.057	-0.039	0.851	1.319	0.056	0.024	0.004	0.041	0.001
4429	MDRGP	881122	1.02	1.10	150.0	4.43	43.4	17.2	0.021	0.155	-0.028	-0.038	-0.024	0.792	2.076	0.127	0.074	0.026	0.225	0.017
4504	MDRGP	881220	0.98	1.19	100.0	4.33	49.3	17.9	0.021	0.103	-0.004	-0.059	-0.019	0.889	1.887	0.126	0.046	0.022	0.042	0.006
4505	MDRGP	881227	1.01	1.18	400.0	4.33	48.8	18.4	0.016	0.150	-0.004	-0.061	-0.018	2.164	1.073	0.178	0.036	0.013	0.053	0.009

Mississippi





□ Major city (for reference)

* EPA Acid Rain Site

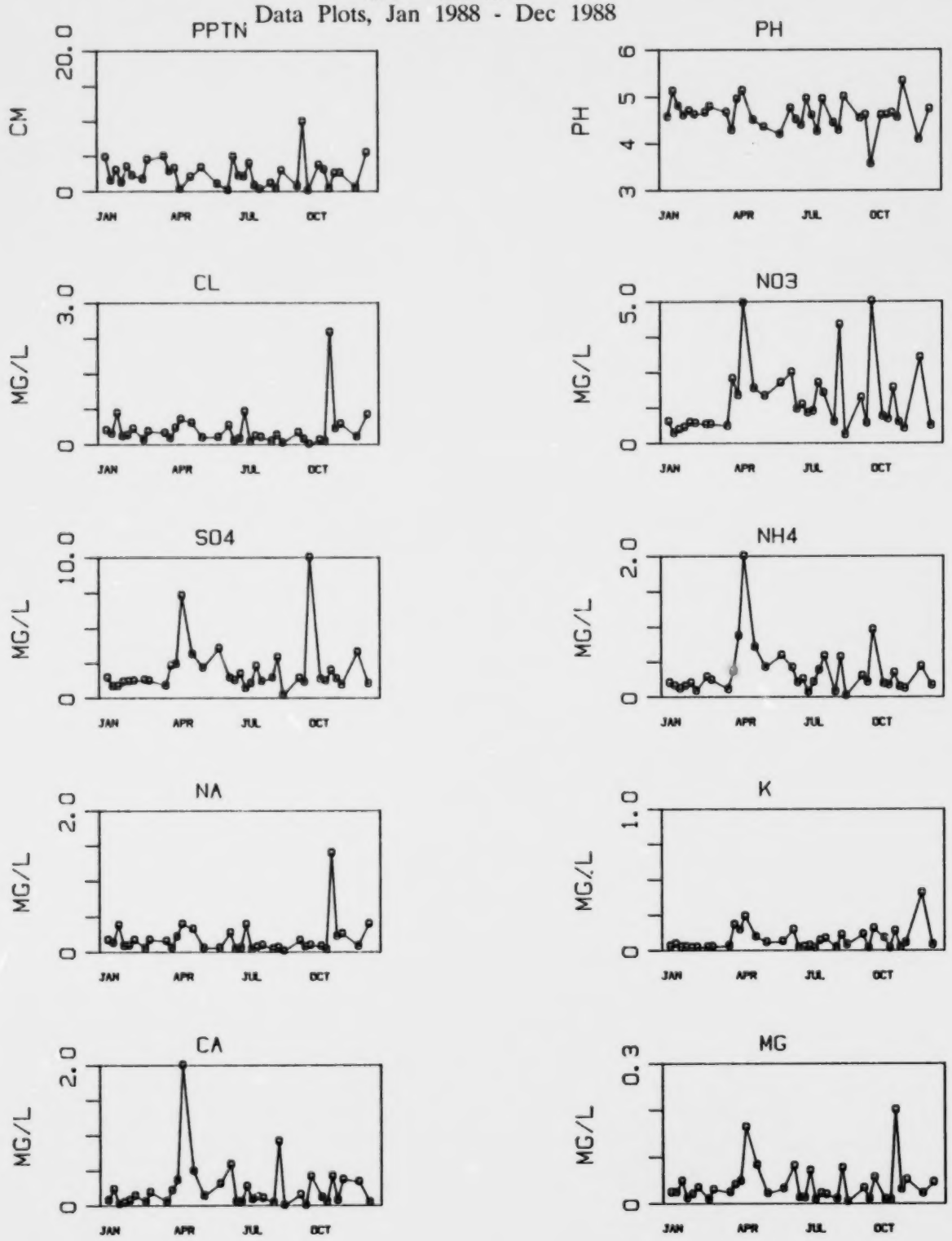
MISSISSIPPI

SITE	SITE NAME	NEAREST CITY	COUNTY	SAMPLING PERIOD[1] BEGIN	END	#SAMPLES	%NON-VOID[2]
MSUNI	University	University	Lafayette			38	100.0

(1) "BEGIN" was JAN 88 and "END" was DEC 88 unless otherwise noted. For sites which were not operational during 1988, the date range of operation is given.

(2) Percentage of samples received which were not voided by GGC due to contamination.

Figure 2-1 (continued)
Site: MSUNI
Data Plots, Jan 1988 - Dec 1988



MS88

09-25-1989
Page *

EPA State Operated Rain Network
1988 Sampling and Field Data

GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3525	MSUNI	880112	930	880119	930	880125	20.50	2	1.90	3340.0	16.8	4.53		
3539	MSUNI	880119	930	880126	930	880128	0.50	1	0.60	818.0	8.6	4.86	3	
3565	MSUNI	880126	930	880202	930	880205	0.50	3	1.17	1970.0	12.2	4.75		
3586	MSUNI	880202	930	880209	930	880211	0.50	3	0.49	774.0	14.4	4.62		
3601	MSUNI	880209	930	880216	930	880217	2.50	3	1.37	2249.0	13.3	4.60	3	
3634	MSUNI	880216	930	880223	930	880226	0.50	3	0.87	1500.0	14.1	4.65	3	
3667	MSUNI	880301	930	880307	1000	880311	0.50	2	0.67	1210.0	15.0	4.64	3	
3689	MSUNI	880307	1000	880315	930	880321	0.50	3	1.75	2943.0	12.7	4.70	3	
3745	MSUNI	880329	930	880405	930	880407	0.50	5	1.95	3153.0	10.9	4.74		
3772	MSUNI	880405	930	880412	930	880418	0.50	3	1.12	1908.0	27.1	4.31	3	
3799	MSUNI	880412	930	880419	930	880425	0.50	3	1.27	2191.0	23.1	4.55	3	
3826	MSUNI	880419	930	880426	930	880503	0.50	2	0.10	198.0	45.6	4.55	3	
3845	MSUNI	880503	930	880510	930	880513	0.50	2	0.79	1332.0	24.2	4.56	3	
3896	MSUNI	880517	930	880524	930	880531	0.50	3	1.32	2265.0	24.5	4.42	3	
3916	MSUNI	880524	930	880531	930	880607	0.50	1	0.07	133.0				34
3941	MSUNI	880607	930	880614	930	880620	0.50	1	0.40	680.0	35.7	4.18	3	
3967	MSUNI	880621	930	880628	930	880701	0.50	1	0.05	69.0			3	
3984	MSUNI	880628	930	880705	930	880708	0.50	3	1.92	3184.0	16.3	4.50	3	
3997	MSUNI	880705	930	880712	930	880714	0.50	3	0.85	1492.0	21.0	4.54	3	
4030	MSUNI	880712	930	880719	930	880725	0.50	2		1397.0	10.4	4.65	3	
4040	MSUNI	880719	930	880726	930	880729	0.50	4	1.55	2655.0	14.3	4.61	3	
4063	MSUNI	880726	930	880802	930	880805	0.50	1	0.30	512.0	40.8	4.04	3	
4102	MSUNI	880802	900	880809	900	880815	0.50	1	0.10	142.0			3	
4135	MSUNI	880816	930	880823	815	880826	0.50	1	0.44	758.0	16.6	4.44	3	
4200	MSUNI	880823	815	880830	930	880902	0.50	2	0.15	303.0	34.9	4.24	34	
4179	MSUNI	880830	930	880906	1000	880915	0.50	1	1.15	1929.0	4.2	5.10		
4241	MSUNI	880913	940	880920	1000	880923	0.50	2		7261.0	5.4	5.05	3	34
4265	MSUNI	880920	1000	880927	1000	881005	0.50	1	0.28	486.0	17.0	4.59	3	
4276	MSUNI	880927	1000	881004	1000	881011	0.50	3	3.90	6744.0	12.8	4.67	3	
4270	MSUNI	881004	1000	881011	900	881011	0.50			38.0			3	

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EPA State Operated Rain Network
1988 Laboratory Data

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3525	MSUNI	880112	1.02	1.14	550.0	4.57	32.0	13.0	0.008	0.295	-0.007	0.030	-0.045	0.766	1.449	0.198	0.168	0.030	0.075	0.024
3539	MSUNI	880119	0.86	1.29	500.0	5.12	12.3	5.3	0.010	0.226	-0.005	0.032	-0.053	0.353	0.845	0.156	0.128	0.046	0.232	0.024
3565	MSUNI	880126	1.00	1.15	550.0	4.80	21.2	9.1	-0.005	0.663	-0.012	-0.017	-0.015	0.483	0.863	0.115	0.384	0.026	0.021	0.048
3586	MSUNI	880202	0.93	1.08	550.0	4.60	26.3	11.8	-0.001	0.174	-0.018	0.012	-0.008	0.561	1.158	0.154	0.089	0.026	0.044	0.012
3601	MSUNI	880209	1.09	1.07	550.0	4.70	24.3	10.9	0.009	0.199	-0.019	0.041	-0.136	0.724	1.200	0.195	0.093	0.021	0.073	0.020
3634	MSUNI	880216	1.04	1.14	550.0	4.62	27.7	11.7	0.007	0.330	-0.011	0.050	-0.114	0.701	1.234	0.087	0.169	0.022	0.141	0.034
3667	MSUNI	880301	0.95	1.19	550.0	4.66	23.9	10.3	0.008	0.104	-0.004	0.018	-0.012	0.660	1.298	0.283	0.054	0.024	0.055	0.009
3689	MSUNI	880307	0.93	1.22	550.0	4.79	21.4	9.2	0.009	0.277	-0.006	0.025	-0.006	0.666	1.238	0.236	0.171	0.026	0.188	0.030
3745	MSUNI	880329	0.88	1.23	550.0	4.66	28.9	9.3	-0.007	0.243	-0.010	-0.043	-0.020	0.603	0.904	0.107	0.154	0.032	0.059	0.024
3772	MSUNI	880405	0.97	1.14	550.0	4.28	54.6	24.4	0.013	0.135	-0.007	0.037	-0.010	2.277	2.338	0.363	0.062	0.182	0.218	0.041
3799	MSUNI	880412	0.95	0.98	550.0	4.95	15.2	16.7	0.015	0.347	-0.013	0.045	-0.005	1.691	2.433	0.868	0.218	0.146	0.362	0.048
3826	MSUNI	880419	0.93	1.05	185.0	5.13	16.2	36.9	0.066	0.529	-0.008	0.034	-0.006	4.945	7.305	2.110	0.395	0.242	2.163	0.164
3845	MSUNI	880503	0.94	1.13	550.0	4.50	34.1	22.2	0.018	0.452	-0.006	0.049	-0.009	1.933	3.130	0.708	0.324	0.096	0.487	0.083
3896	MSUNI	880517	0.96	1.13	550.0	4.35	48.8	20.9	0.013	0.146	-0.025	-0.046	-0.005	1.665	2.173	0.420	0.056	0.056	0.139	0.022
3916	MSUNI	880524	0.93	1.15	150.0	4.58	31.0	13.8	0.015	0.112	-0.003	-0.041	-0.015	1.484	1.400	0.508	0.059	0.067	0.048	0.006
3941	MSUNI	880607	0.97	1.04	550.0	4.19	70.5	33.5	0.034	0.153	-0.003	0.026	-0.011	2.126	3.560	0.587	0.054	0.063	0.309	0.032
3967	MSUNI	880621	0.92	0.98	70.0	4.75		17.3	0.060	0.398	-0.008	-0.026	-0.001	2.487	1.437	0.415	0.271	0.146	0.584	0.080
3984	MSUNI	880628	1.01	1.06	550.0	4.51	36.8	14.6	0.015	0.084	-0.005	-0.019	-0.002	1.202	1.253	0.202	0.041	0.021	0.057	0.013
3997	MSUNI	880705	1.03	1.09	550.0	4.39	48.7	18.6	0.015	0.123	-0.009	0.016	-0.020	1.358	1.724	0.248	0.060	0.026	0.051	0.013
4030	MSUNI	880712	1.00	1.05	550.0	4.96	17.0	9.6	0.010	0.694	-0.006	-0.052	-0.025	1.064	0.705	0.072	0.388	0.032	0.273	0.070
4040	MSUNI	880719	0.97	1.14	550.0	4.60	33.2	11.5	0.008	0.062	-0.005	-0.069	-0.024	1.124	1.056	0.206	0.035	0.018	0.087	0.009
4063	MSUNI	880726	1.00	0.99	400.0	4.25	68.6	28.8	0.040	0.173	-0.002	0.028	-0.039	2.118	2.276	0.378	0.068	0.069	0.126	0.022
4102	MSUNI	880802	1.08	1.01	150.0	4.95	14.8	11.3	0.036	0.152	-0.003	0.038	-0.026	1.770	1.189	0.576	0.094	0.085	0.104	0.019
4135	MSUNI	880816	1.02	1.15	550.0	4.44	43.2	14.5	0.020	0.072	-0.003	0.031	-0.036	0.743	1.454	0.072	0.042	0.021	0.043	0.011
4200	MSUNI	880823	0.97	1.06	250.0	4.28	58.5	32.3	0.052	0.196	-0.004	0.036	-0.022	4.171	2.906	0.565	0.063	0.109	0.912	0.076
4179	MSUNI	880830	0.79	1.30	525.0	5.00	14.4	3.4	0.005	0.033	-0.007	-0.040	-0.028	0.295	0.195	0.015	0.012	0.040	-0.019	0.004
4241	MSUNI	880913	1.15	1.20	550.0	5.02	11.2	4.2	0.002	0.036	-0.006	0.057	-0.021	0.278	0.527	0.063	0.025	-0.014	0.030	0.005
4265	MSUNI	880920	0.96	1.17	550.0	4.54	31.0	14.6	-0.003	0.249	-0.004	-0.012	-0.017	1.595	1.423	0.293	0.161	0.113	0.153	0.033
4276	MSUNI	880927	0.98	1.10	550.0	4.61	25.2	11.4	0.008	0.112	-0.056	0.034	-0.013	0.701	1.127	0.206	0.074	0.016	-0.033	0.010
4270	MSUNI	881004	1.12	0.92	12.0	3.56		143.7	0.052	-0.318	-0.054	0.622	-0.016	7.762	12.238	0.956	0.093	0.154	0.408	0.056

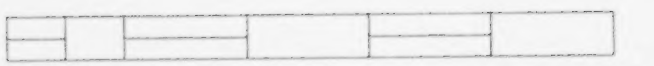
EPA State Operated Rain Network
1988 Sampling and Field Data

GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
4320	MSUNI	881018	1030	881025	945	881028	0.50	3	1.45	2540.0	15.4	4.56		
4330	MSUNI	881025	945	881101	1000	881109	0.50	1	1.20	2096.0	14.7	4.65	3	
4362	MSUNI	881101	1000	881108	925	881116	0.50	1	0.17	359.0	28.6	4.52	3	
4363	MSUNI	881108	925	881115	1000	881116	0.50	2	1.00	1733.0	15.7	4.56	3	
4380	MSUNI	881115	1000	881122	930	881117	0.50	2	1.02	1786.0	7.3	5.08	3	
4407	MSUNI	881122	930	881129	1000	881202	0.50	2	2.70	4646.0	15.2	4.72	3	34
4442	MSUNI	881206	930	881213	50	881215	0.50	2	0.20	312.0	44.6	4.07	3	
4506	MSUNI	881220	830	881227	1030	890103	0.50	4	2.15	3597.0	12.4	4.82		

EPA State Operated Rain Network
1988 Laboratory Data

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4320	MSUNI	881018	1.02	1.08	550.0	4.60	32.3	12.8	0.017	0.091	-0.082	0.047	-0.009	0.939	1.354	0.184	0.082	0.087	0.115	0.009
4330	MSUNI	881025	1.08	1.07	575.0	4.61	30.2	11.8	0.012	0.072	-0.052	-0.033	-0.005	0.840	1.226	0.164	0.035	0.014	0.056	0.008
4362	MSUNI	881101	0.99	1.06	300.0	4.65	25.2	23.8	0.021	2.374	-0.014	-0.048	-0.049	1.942	1.981	0.337	1.392	0.137	0.415	0.200
4363	MSUNI	881108	0.97	1.17	575.0	4.55	33.4	12.9	0.014	0.333	-0.014	-0.048	-0.049	0.732	1.369	0.141	0.220	0.023	0.075	0.030
4380	MSUNI	881115	0.88	1.10	575.0	5.33	13.1	6.5	0.013	0.425	-0.014	-0.060	-0.034	0.518	0.945	0.116	0.255	0.052	0.368	0.051
4407	MSUNI	881122	0.94	1.14	575.0	4.75	21.7	11.6	0.014	0.569	-0.014	-0.071	-0.037	0.602	1.488	0.251	0.329	0.064	0.198	0.049
4442	MSUNI	881206	0.89	1.11	200.0	4.08	83.5	37.7	0.021	0.163	-0.018	-0.025	-0.024	3.010	3.287	0.427	0.083	0.403	0.336	0.022
4506	MSUNI	881220	0.96	1.29	550.0	4.73	22.5	9.4	0.009	0.626	-0.004	-0.063	-0.018	0.612	1.022	0.159	0.397	0.039	0.043	0.045

South Carolina



□ Major city (for reference)

* EPA Acid Rain Site

SOUTH CAROLINA

SITE	SITE NAME	NEAREST CITY	COUNTY	SAMPLING PERIOD[1] BEGIN	END	#SAMPLES	%NON-VOID[2]
SCCAP	Cape Romain	Mt Pleasant	Charleston			39	97.4
SCCON	Congaree Swamp	Hopkins	Richland			44	97.7
SCDEL	Delta	Whitmore	Union			39	94.9
SCLON	Lng Crk Fire Twr	Walhalla	Oconee			42	95.2

(1) "BEGIN" was JAN 88 and "END" was DEC 88 unless otherwise noted. For sites which were not operational during 1988, the date range of operation is given.

(2) Percentage of samples received which were not voided by GGC due to contamination.

Figure 2-1 (continued)
Site: SCCAP
PPTN Data Plots, Jan 1988 - Dec 1988

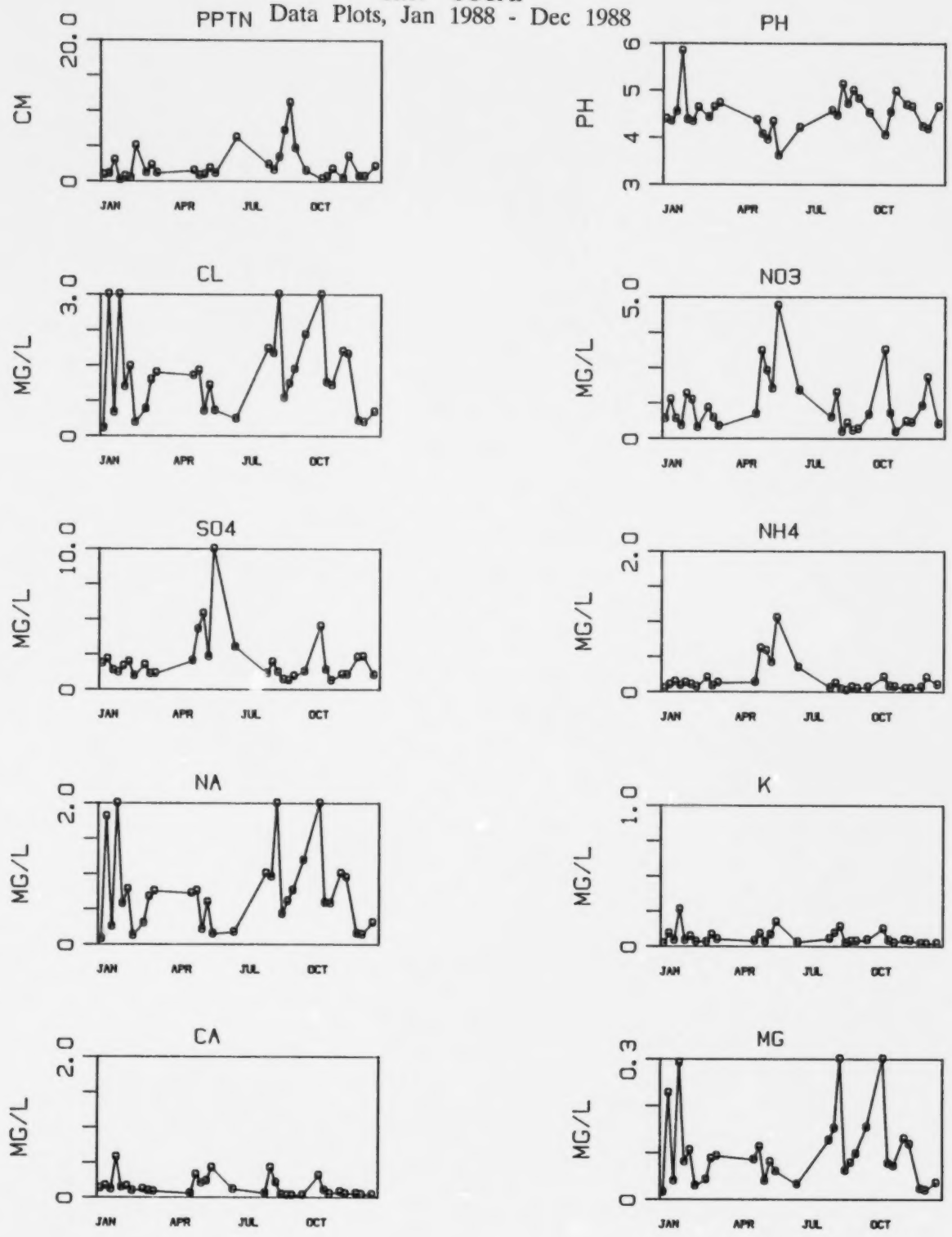


Figure 2-1 (continued)
Site: SCCON
PPTN Data Plots, Jan 1988 - Dec 1988

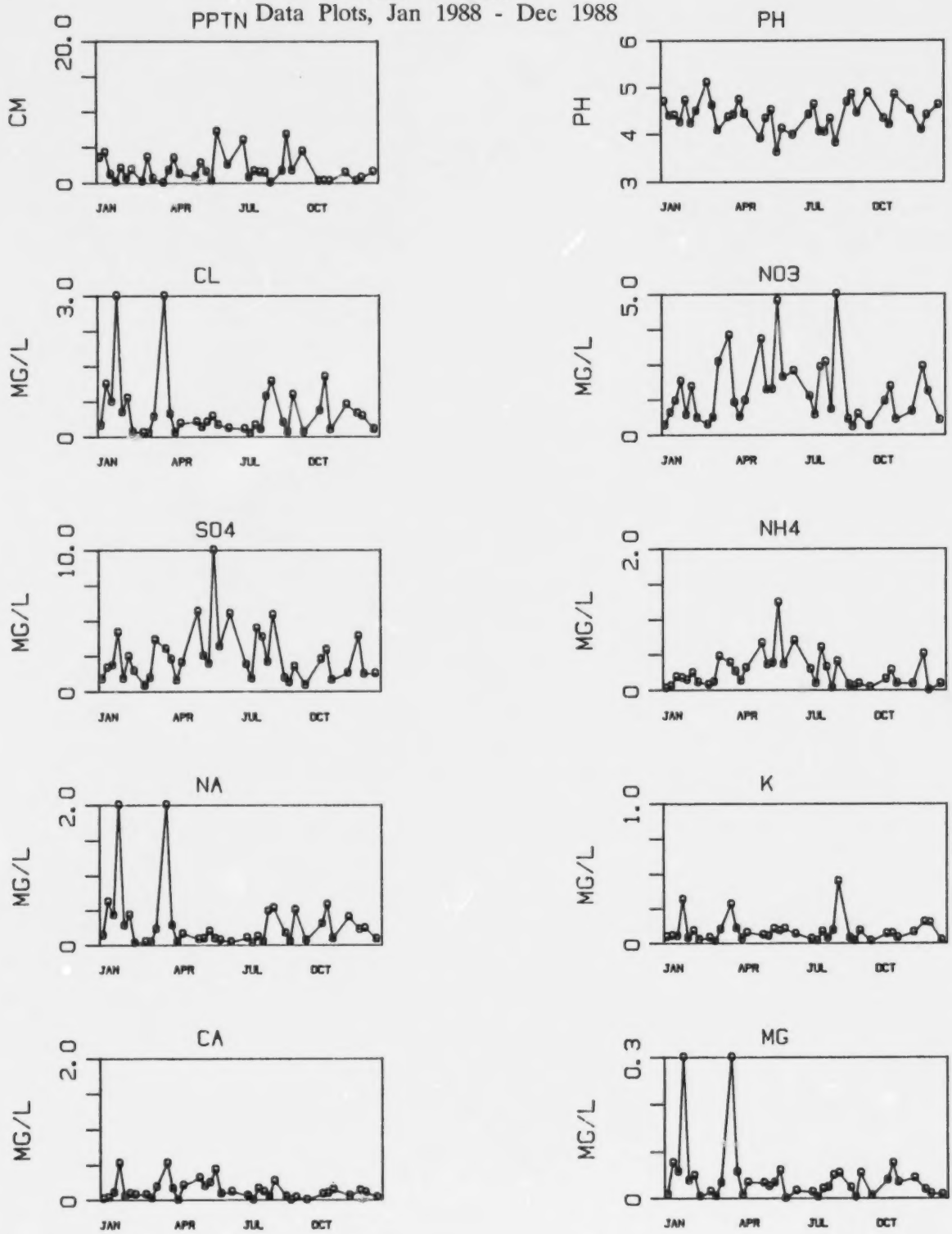


Figure 2-1 (continued)
Site: SCDEL
Data Plots, Jan 1988 - Dec 1988

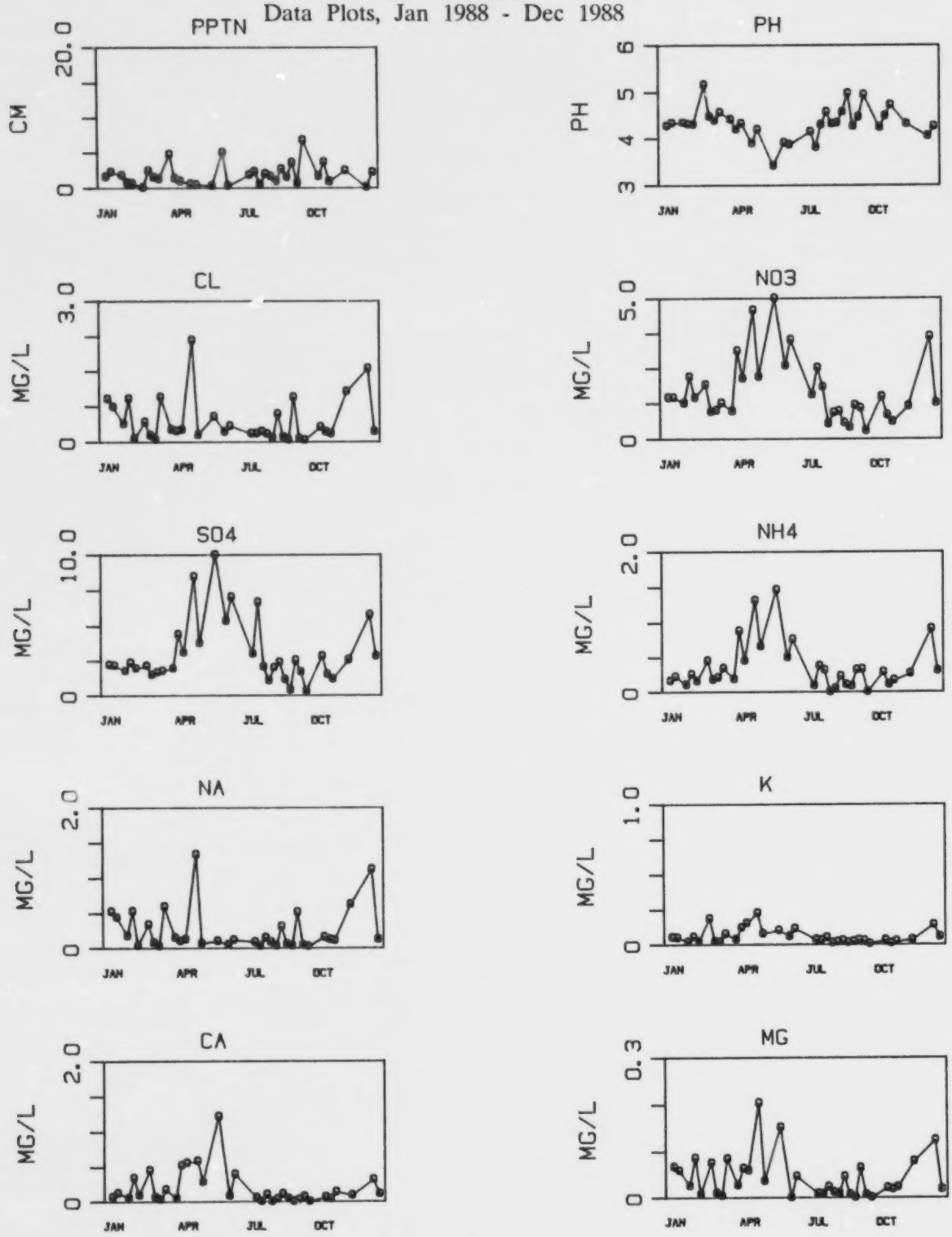
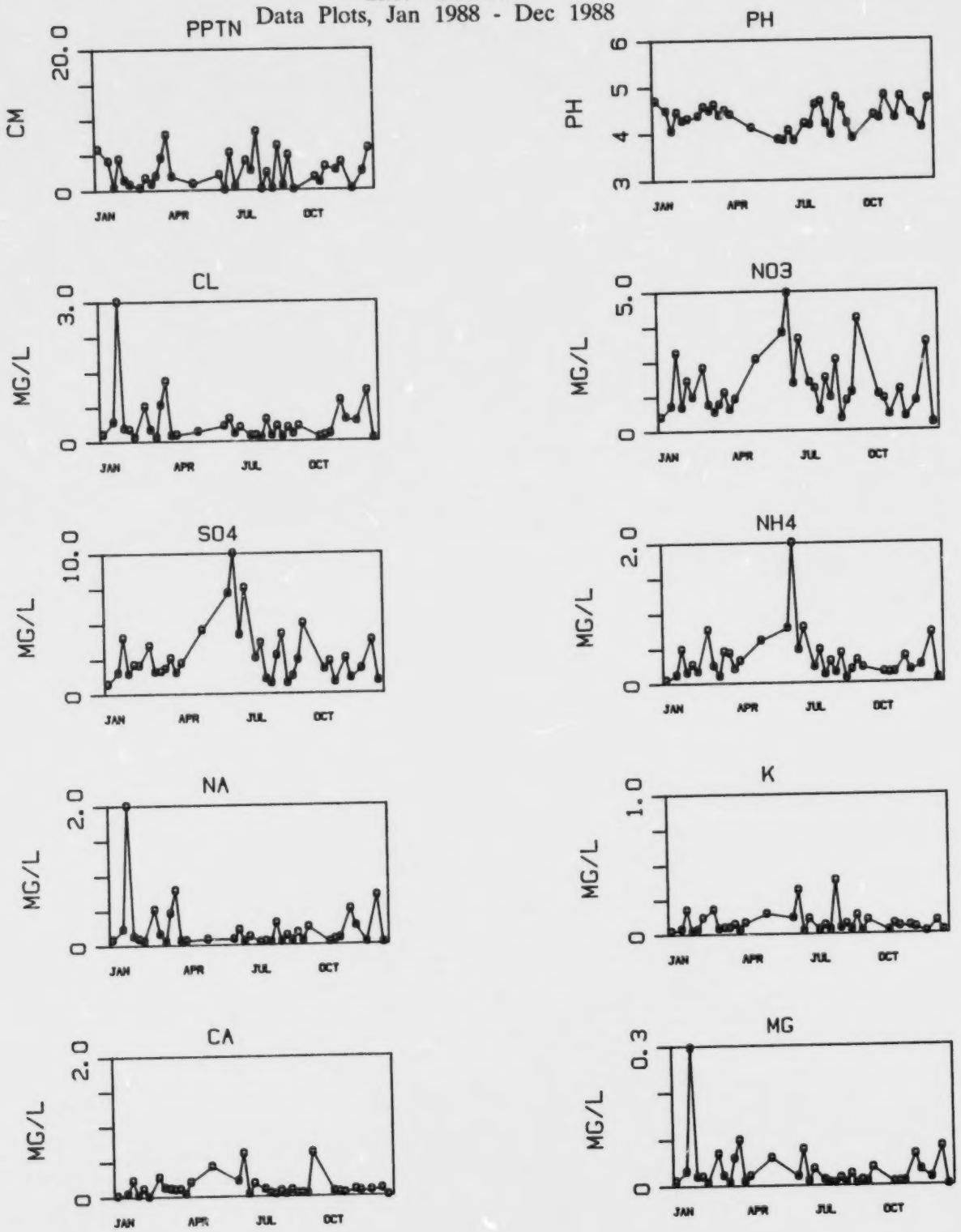


Figure 2-1 (continued)
Site: SCLON
Data Plots, Jan 1988 - Dec 1988



SC88

09-25-1989
Page 1

EPA State Operated Rain Network
1988 Sampling and Field Data

GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3534	SCCAP	880105	930	880112	930	880127		3	0.35	1097.0	18.1	4.44	3	
3535	SCCAP	880112	930	880119	930	880127	3.00	4	0.42	873.0	34.3	4.32		
3557	SCCAP	880119	930	880126	930	880202				2027.0	15.4	4.51	3	
3571	SCCAP	880126	930	880202	930	880209	3.00	4		108.0			3	
3602	SCCAP	880202	930	880209	930	880217		2		463.0	24.7	4.20	3	
3621	SCCAP	880209	930	880216	930	880223		4	0.19	371.5	28.2	4.15	3	
3652	SCCAP	880216	930	880223	930	880302				3421.0	10.4	4.58	2	33
3690	SCCAP	880301	930	880308	930	880321		1	0.47	737.5	19.7	4.47		
3701	SCCAP	880308	930	880315	930	880323		2	0.89	1617.0	14.8	4.67		
3726	SCCAP	880315	930	880322	930	880330				772.0	15.0	4.68		
3800	SCCAP	880405		880412		880426				365.0	36.6	4.34	34	3499
3811	SCCAP	880412	930	880419	930	880428				2467.0	19.6	4.49	3	213334
3827	SCCAP	880419	930	880426	930	880505		2	0.64	1912.5	18.3	4.61	3	34
3857	SCCAP	880503	930	880510	930	880517		1	0.59	1960.0	22.6	4.33	3	
3878	SCCAP	880510	930	880517	930	880524		3		538.0	43.8	4.00	3	
3897	SCCAP	880517	930	880524	930	880531		2	0.38	859.0	53.6	3.93	3	21
3924	SCCAP	880524	930	880531	930	880608				1229.0	27.9	4.27	3	
3931	SCCAP	880531	930	880607	930	880615		2	0.44	802.5	116.5	3.59	3	
3942	SCCAP	880607	930	880614	930	880620				2497.5	24.1	4.16	3	34
3996	SCCAP	880628	930	880705	930	880714				4208.0	31.0	4.24	3	33
4036	SCCAP	880712	905	880719	905	880728				1401.0	9.4	4.70	3	34
4056	SCCAP	880719	905	880726	900	880802		2	1.03	1578.0	26.3	4.33	13	34
4108	SCCAP	880802	1000	880809	940	880817	20.00	4	0.96	1286.0	48.0	4.03	3	213334
4119	SCCAP	880809		880816		880822		5	0.93	2078.0	18.9	4.56	3	
4146	SCCAP	880816	1000	880823	1005	880829		2	0.63	1114.0	24.3	4.47	3	
4208	SCCAP	880823	945	880830	905	880907		3	1.35	2707.0	27.2	5.01	3	
4180	SCCAP	880830	905	880906	920	880913		6	2.84	4835.5	11.5	4.65	3	
4231	SCCAP	880906	920	880913	1100	880922		4	4.38	7460.5	8.9	4.88		
4247	SCCAP	880913	1100	880920	935	880927		4	1.84	3669.0	12.7	4.71	3	
4291	SCCAP	880920	935	880927	1030	881011		1	0.71					

EPA State Operated Rain Network
1988 Laboratory Data

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3534	SCCAP	880105	1.03	1.12	550.0	4.39	44.1	17.2	0.020	0.168	-0.006	0.030	-0.056	0.692	1.858	0.049	0.079	0.021	0.130	0.016
3535	SCCAP	880112	1.04	1.03	550.0	4.34	49.7	33.3	-0.003	3.462	-0.006	0.024	-0.057	1.371	2.159	0.099	1.810	0.090	0.169	0.227
3557	SCCAP	880119	0.97	1.14	550.0	4.54	33.5	14.0	0.026	0.500	-0.005	0.021	-0.028	0.688	1.370	0.141	0.250	0.042	0.117	0.040
3571	SCCAP	880126	0.93	1.03	100.0	5.83		21.5	0.027	4.523	-0.011	-0.017	0.074	0.451	1.214	0.091	2.502	0.261	0.574	0.292
3602	SCCAP	880202	1.02	1.08	430.0	4.37	45.3	22.4	0.019	1.045	-0.019	0.034	-0.137	1.567	1.656	0.128	0.574	0.042	0.142	0.080
3621	SCCAP	880209	1.02	1.07	330.0	4.33	48.0	25.6	0.016	1.478	-0.016	0.028	-0.172	1.353	1.967	0.100	0.781	0.070	0.160	0.105
3652	SCCAP	880216	0.90	1.24	550.0	4.63	27.1	9.6	0.021	0.284	-0.006	0.044	-0.006	0.389	0.954	0.070	0.125	0.035	0.095	0.029
3690	SCCAP	880301	0.99	1.14	550.0	4.42	41.6	18.1	0.014	0.575	-0.007	0.029	-0.006	1.067	1.739	0.200	0.298	0.031	0.116	0.043
3701	SCCAP	880308	0.98	1.11	550.0	4.64	25.7	14.3	0.009	1.194	-0.007	0.019	-0.006	0.721	1.111	0.083	0.675	0.081	0.094	0.087
3726	SCCAP	880315	0.97	1.12	550.0	4.72	22.2	13.2	0.012	1.347	-0.023	-0.024	-0.018	0.427	1.139	0.126	0.753	0.050	0.085	0.092
3800	SCCAP	880405	9999	9999	330.0	4.31														
3811	SCCAP	880412	0.96	1.09	550.0	4.60	31.4	18.8	0.020	1.188	-0.009	0.045	-0.005	1.278	1.869	0.488	0.640	0.102	0.199	0.088
3827	SCCAP	880419	0.95	1.12	550.0	4.68	23.6	17.0	0.011	1.410	-0.008	0.033	-0.007	1.277	1.511	0.410	0.786	0.095	0.188	0.107
3857	SCCAP	880503	1.02	1.13	550.0	4.36	46.4	22.2	0.007	1.286	-0.005	0.051	-0.005	0.853	2.039	0.136	0.722	0.038	0.056	0.085
3878	SCCAP	880510	1.00	1.06	510.0	4.06	89.0	46.8	0.031	1.389	-0.006	0.018	-0.005	3.094	4.280	0.616	0.758	0.088	0.324	0.112
3897	SCCAP	880517	1.00	1.06	550.0	3.95	117.7	52.3	0.026	0.524	-0.027	-0.047	-0.005	2.387	5.370	0.583	0.207	0.033	0.204	0.039
3924	SCCAP	880524	0.95	1.02	550.0	4.33	54.6	28.2	0.059	1.079	-0.002	-0.036	-0.011	1.750	2.330	0.416	0.597	0.082	0.233	0.080
3931	SCCAP	880531	1.05	0.98	550.0	3.61	259.6	121.2	0.059	0.535	-0.005	0.021	-0.021	4.692	12.590	1.049	0.147	0.171	0.423	0.060
3942	SCCAP	880607	0.96	1.13	550.0	4.28	56.0	23.2	0.019	0.263	-0.002	0.022	-0.010	1.153	2.436	0.335	0.127	0.037	0.053	0.024
3996	SCCAP	880628	1.03	1.05	550.0	4.20	69.6	30.2	0.018	0.360	-0.009	0.012	-0.021	1.684	2.996	0.345	0.171	0.029	0.115	0.032
4036	SCCAP	880712	1.07	1.00	450.0	4.79	24.1	8.9	0.005	0.414	-0.005	-0.061	-0.024	0.491	0.604	-0.008	0.216	0.018	0.039	0.029
4056	SCCAP	880719	1.05	1.03	510.0	4.39	49.3	25.0	0.012	1.828	-0.003	-0.105	-0.021	1.468	1.590	0.062	1.019	0.054	0.086	0.125
4108	SCCAP	880802	1.04	0.98	550.0	4.03	103.8	46.8	0.017	0.582	-0.004	-0.026	-0.018	2.472	4.032	0.238	0.323	0.049	0.173	0.072
4119	SCCAP	880809	1.00	1.08	550.0	4.56	32.4	18.1	-0.018	1.858	-0.005	0.035	-0.025	0.739	1.148	0.059	1.007	0.054	0.059	0.127
4146	SCCAP	880816	0.99	1.07	475.0	4.46	36.5	23.9	0.017	1.762	-0.004	0.028	-0.025	1.608	1.943	0.118	0.958	0.093	0.424	0.152
4208	SCCAP	880823	1.03	1.08	550.0	5.12	11.9	27.2	0.020	6.482	-0.006	-0.039	-0.026	0.236	1.236	0.038	3.399	0.139	0.212	0.427
4180	SCCAP	880830	0.99	1.08	550.0	4.71	24.5	10.9	0.006	0.807	-0.007	-0.038	-0.027	0.539	0.712	0.018	0.431	0.025	0.043	0.061
4231	SCCAP	880906	1.04	1.12	550.0	4.99	12.6	8.5	0.007	1.113	-0.013	0.044	-0.020	0.285	0.657	0.065	0.610	0.036	0.031	0.079
4247	SCCAP	880913	1.10	1.06	550.0	4.82	18.9	12.1	0.007	1.419	-0.005	0.054	-0.020	0.343	0.949	0.051	0.763	0.037	0.029	0.097
4291	SCCAP	880920	9999	9999																

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GGC ID	Site Code	Begin Day	Begin Time	End Day	End Time	Date Rec'd	Type	# Rain Events	Precip inches	Field Wt gm	Field Cond µmho/cm	Field pH	Comment Codes 1	Comment Codes 2
4292	SCCAP	880927	1030	881004	945	881011		3	0.59	982.0	22.0	4.51	3	
4331	SCCAP	881018	1000	881025	1030	881109		2	0.14	264.5	67.8	3.90	3	
4352	SCCAP	881025	1030	881101	1025	881109		3	0.27	433.0	21.1	4.40	3	
4364	SCCAP	881101	1025	881107	1015	881116		2	0.68	1170.0		4.60	3	
4417	SCCAP	881115	1015	881122	1000	881206		2	0.18	336.0		4.44	3	
4416	SCCAP	881122	1000	881129	1350	881206		3	1.41	2404.0	16.3	4.43		
4452	SCCAP	881206	1245	881213	1115	891219		2	0.29	510.0	27.3	4.02	3	
4466	SCCAP	881213	1115	881220	910	890102		1	0.29	496.0	30.6	4.01	3	
4509	SCCAP	881227	1610	890103	1005	890119		5	0.85	1434.0	15.3	4.37		
3540	SCCON	880105	1230	880112	1030	880128		2		2392.0	11.0	4.67	3	33
3541	SCCON	880112	1100	880119	930	880128		8	1.67	1217.0	22.0	4.69	3	
3558	SCCON	880119	930	880126	1300	880202		3	0.46	848.0	22.4	4.35	3	
3572	SCCON	880126	1300	880202	1230	880209		2	0.05	62.0			3	
3603	SCCON	880202	1230	880209	1200	880217		3	0.81	1390.0	12.4	4.65		
3622	SCCON	880209	1200	880216	1030	880223		2	0.27	542.0	34.5	4.12	3	
3656	SCCON	880216	1030	880223	1130	880303		4	0.72	1294.0	14.7	4.43		
3674	SCCON	880301	1335	880308	1030	880315		1	0.08	172.0			3	
3693	SCCON	880308	1030	880315	1130	880322		3	1.41	2419.0	11.8	4.58	3	
3722	SCCON	880315	1130	880322	1146	880329		1	0.25	586.0	44.8	4.06	3	
3741	SCCON	880322	1146	880329	1430	880406		1	0.04	71.0			3	99
3766	SCCON	880329	1430	880405	1510	880415		1	0.02	98.0			2	
3773	SCCON	880405	1510	880412	1130	880418		3	0.68	1335.0	21.6	4.43	3	
3817	SCCON	880412	945	880419	945	880429		5	1.35	3036.0	10.0	4.66	3	
3824	SCCON	880419	945	880426		880503		3	0.49	1058.0	26.3	4.39	3	
3858	SCCON	880503	1200	880510	1045	880517		1	0.34	757.0	36.2	4.13	3	3334
3879	SCCON	880510	1045	880517	1235	880524		4	0.35	694.0	55.4	3.90	3	
3898	SCCON	880517	1235	880524	940	880531		3	1.09	2088.0	24.9	4.22	3	
3925	SCCON	880524	940	880531	1200	880608		3	0.61	1096.0		4.37	3	
3932	SCCON	880531	1200	880607	930	880615		2	0.12	234.0	118.6	3.58	3	33

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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4292	SCCAP	880927	1.02	1.05	550.0	4.52	33.5	20.9	0.009	2.151	-0.060	0.044	-0.009	0.832	1.281	0.067	1.190	0.047	0.031	0.154
4331	SCCAP	881018	1.04	0.98	250.0	4.05	100.1	62.0	0.028	4.546	-0.050	-0.033	-0.004	3.126	4.485	0.207	2.695	0.122	0.314	0.329
4352	SCCAP	881025	1.06	1.03	400.0	4.53	35.7	17.7	0.010	1.141	-0.004	-0.030	-0.010	0.872	1.403	0.080	0.589	0.042	0.105	0.077
4364	SCCAP	881101	0.99	1.13	579.0	4.98	14.3	8.3	0.008	1.078	-0.013	-0.048	-0.048	0.237	0.652	0.074	0.580	0.027	0.053	0.071
4417	SCCAP	881115	1.02	1.11	250.0	4.69	25.0	15.1	0.035	1.799	-0.014	-0.074	-0.030	0.597	1.064	0.048	1.005	0.046	0.080	0.130
4416	SCCAP	881122	1.02	1.12	575.0	4.65	26.3	15.1	0.010	1.739	-0.013	-0.077	-0.030	0.560	1.069	0.048	0.950	0.042	0.053	0.118
4452	SCCAP	881206	1.03	1.10	475.0	4.23	60.0	24.6	0.013	0.326	-0.011	-0.013	-0.029	1.136	2.302	0.069	0.152	0.021	0.058	0.023
4466	SCCAP	881213	1.07	1.12	450.0	4.18	66.5	27.9	0.014	0.296	-0.018	0.034	-0.040	2.136	2.343	0.200	0.141	0.020	0.043	0.019
4509	SCCAP	881227	0.96	1.25	550.0	4.65	25.8	10.1	0.009	0.516	-0.003	-0.072	-0.015	0.510	1.034	0.102	0.307	0.022	0.038	0.035
3540	SCCON	880105	1.10	1.30	550.0	4.70	22.4	7.6	-0.003	0.242	-0.005	0.031	0.090	0.347	0.885	0.026	0.136	0.045	0.016	0.010
3541	SCCON	880112	1.03	1.14	550.0	4.39	42.8	19.6	0.014	1.125	-0.005	0.026	0.126	0.785	1.677	0.059	0.622	0.053	0.032	0.076
3558	SCCON	880119	1.00	1.13	550.0	4.40	41.8	19.6	0.013	0.741	-0.005	0.013	-0.027	1.207	1.832	0.185	0.425	0.051	0.105	0.057
3572	SCCON	880126	1.02	1.04	60.0	4.25	59.2	63.6	0.041	9.442	-0.011	0.040	0.083	1.911	4.182	0.171	5.292	0.316	0.522	0.626
3603	SCCON	880202	1.02	1.12	550.0	4.72	21.0	10.4	0.008	0.517	-0.019	0.033	-0.139	0.704	0.913	0.141	0.277	0.039	0.052	0.038
3622	SCCON	880209	1.03	1.06	510.0	4.23	64.2	29.2	0.012	0.826	-0.016	0.034	-0.174	1.718	2.477	0.241	0.430	0.088	0.092	0.049
3656	SCCON	880216	1.02	1.20	550.0	4.49	34.4	12.8	0.013	0.101	-0.007	0.056	-0.007	0.595	1.446	0.109	0.030	0.027	0.078	0.004
3674	SCCON	880301	0.91	1.27	175.0	5.10	12.9	3.8	0.010	0.085	-0.005	0.022	-0.013	0.363	0.423	0.075	0.046	0.039	0.077	0.015
3693	SCCON	880308	0.98	1.29	550.0	4.61	28.2	9.1	0.006	0.080	-0.007	0.027	-0.006	0.614	0.955	0.112	0.041	0.014	0.020	0.004
3722	SCCON	880315	0.98	1.06	525.0	4.08	87.6	39.6	0.018	0.422	-0.025	-0.021	-0.018	2.596	3.661	0.473	0.226	0.096	0.189	0.033
3741	SCCON	880322	9999	9999	70.0	4.77														
3766	SCCON	880329	1.01	1.05	100.0	4.36	45.7	41.7	0.025	4.112	-0.007	0.040	-0.011	3.535	3.008	0.387	2.557	0.280	0.526	0.322
3773	SCCON	880405	1.00	1.14	550.0	4.41	40.8	19.5	0.011	0.481	-0.006	0.026	-0.010	1.138	2.263	0.260	0.279	0.106	0.165	0.057
3817	SCCON	880412	1.08	1.20	550.0	4.73	23.5	8.0	0.008	0.096	-0.009	0.043	-0.005	0.635	0.804	0.131	0.046	0.034	-0.018	0.007
3824	SCCON	880419	0.95	1.16	550.0	4.43	40.2	18.0	0.013	0.285	-0.008	0.042	-0.006	1.210	2.042	0.310	0.158	0.074	0.209	0.034
3858	SCCON	880503	1.03	1.08	550.0	4.17	71.7	37.5	0.020	1.270	-0.005	0.041	-0.005	2.019	4.096	0.483	0.788	0.202	0.233	0.082
3879	SCCON	880510	1.01	1.08	550.0	3.91	128.2	56.1	0.042	0.318	-0.006	0.018	-0.005	3.392	5.678	0.660	0.085	0.059	0.314	0.033
3898	SCCON	880517	1.01	1.10	525.0	4.33	50.2	22.7	0.018	0.203	-0.029	-0.048	-0.004	1.602	2.493	0.360	0.092	0.052	0.197	0.026
3925	SCCON	880524	0.98	1.10	525.0	4.51	37.0	17.8	0.018	0.310	-0.001	-0.030	-0.009	1.618	1.960	0.380	0.195	0.103	0.245	0.034
3932	SCCON	880531	1.07	0.97	200.0	3.62	255.9	121.3	0.054	0.431	-0.005	0.036	-0.020	4.768	13.049	1.240	0.092	0.088	0.435	0.059

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GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3953	SCCON	880607	930	880621		880627		6	2.82	4202.0	39.2	4.04	3	33
3977	SCCON	880621	1052	880628	1210	880706		2	0.99	1833.0	56.0	3.89	3	
3993	SCCON	880628	1200	880705	1100	880713				278.0	138.0	3.55	3	34
4002	SCCON	880705	1100	880712	1100	880718				252.0	27.6	4.35	3	34
4041	SCCON	880712	1100	880719	1000	880729				4071.0	19.8	4.36	3	
4050	SCCON	880719	1000	880726	1215	880801		2	0.31	2792.0	12.0	4.57	3	
4074	SCCON	880726	1220	880802	1100	880808				1124.0	45.2	4.04	3	
4103	SCCON	880802	1100	880809	1000	880815		1	0.58	1083.0	46.6	3.97	3	
4127	SCCON	880809	945	880816	1010	880824				961.0	25.2	4.31	3	
4151	SCCON	880816	1010	880823	1115	880830				23.0			3	
4209	SCCON	880823	1000	880831	1336	880907				7489.0	8.1	4.78	3	34
4185	SCCON	880831	1334	880906	1530	880913				1156.0	11.2	4.65	3	
4232	SCCON	880906	1530	880913	818	880922				4581.0	7.6	4.90		
4248	SCCON	880913	818	880920	900	880927		2	0.68	1223.0	21.8	4.40	3	
4277	SCCON	880920	900	880927	1030	881011		2	0.63	1187.0	32.0	4.40	3	34
4284	SCCON	880927	1030	881004	900	881011		2	1.74	2968.0	6.9	4.85		
4332	SCCON	881018	830	881026	800	881109		2	0.10	898.0	26.4	4.16	3	33
4333	SCCON	881025	800	881101	1400	881109		3	0.12	2456.0	36.6	4.13	3	
4367	SCCON	881101	1400	881107	1030	881116		1	0.11	1005.0		4.74	3	33
4396	SCCON	881115	1449	881122	1350	881117		2	0.37	461.0		5.00	3	3334
4423	SCCON	881122	1347	881129	1045	881206		4	0.57	969.0	16.2	4.36	3	33
4453	SCCON	881206	900	881213	1515	881219	3.00	1	0.11	170.0	45.9	3.86	3	
4465	SCCON	881213	1513	881220	1540	890102		1	0.29	568.0	21.9	4.09	3	33
4511	SCCON	881228	1415	890103	945	890119		3	0.61	1792.0	15.2	4.38		21
3536	SCDEL	880112	1320	880119	1130	880127				1076.0	29.7	4.23	3	
3559	SCDEL	880119	1130	880126	945	880202		1		1523.0	26.9	4.40	3	
3604	SCDEL	880202	1000	880209	1006	880217		3	0.69	1181.0	24.5	4.24	1	
3623	SCDEL	880209	1000	880216	1230	880223		1	0.28	522.0	32.1	4.20	3	
3643	SCDEL	880216	1230	880223	1000	880229		1	0.24	389.0	25.0	4.21	3	

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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3953	SCCON	880607	1.00	1.07	515.0	4.11	84.6	34.7	0.027	0.247	-0.004	-0.018	-0.001	2.057	3.172	0.361	0.070	0.103	0.092	-0.005
3977	SCCON	880621	1.03	1.01	535.0	3.98	116.6	51.5	0.036	0.179	-0.007	-0.024	-0.002	2.277	5.503	0.699	0.042	0.066	0.118	0.017
3993	SCCON	880628	1.04	0.97	230.0	3.54	304.2	140.8	0.072	1.181	-0.009	-0.007	-0.024	6.253	12.701	0.913	0.632	0.147	0.262	0.091
4002	SCCON	880705	1.06	1.00	210.0	4.58	32.7	22.3	0.030	1.254	-0.009	0.015	-0.013	2.245	1.821	0.297	0.827	0.442	0.234	0.047
4041	SCCON	880712	1.05	1.08	525.0	4.41	48.2	18.9	0.017	0.164	-0.005	-0.070	-0.024	1.369	1.901	0.295	0.103	0.031	0.059	0.013
4050	SCCON	880719	1.07	1.15	550.0	4.63	32.9	9.6	0.008	0.071	-0.004	-0.086	-0.022	0.703	0.907	0.096	0.033	0.017	-0.014	0.003
4074	SCCON	880726	1.01	1.02	550.0	4.05	100.0	43.9	0.039	0.245	-0.010	-0.026	-0.042	2.408	4.460	0.598	0.123	0.083	0.162	0.021
4103	SCCON	880802	1.08	1.00	515.0	4.04	102.4	43.2	0.036	0.159	-0.003	0.029	-0.025	2.591	3.846	0.324	0.055	0.039	0.118	0.024
4127	SCCON	880809	1.04	1.02	550.0	4.32	54.2	24.1	-0.024	0.854	-0.006	0.035	-0.029	0.895	2.066	0.030	0.484	0.092	0.053	0.050
4151	SCCON	880816	1.22	1.19	12.0	3.82		65.1	0.084	1.180	-0.005	0.564	-0.018	6.610	5.414	0.400	0.530	0.447	0.271	0.054
4209	SCCON	880823	0.84	1.32	525.0	4.79	22.1	6.5	-0.008	0.343	-0.009	-0.053	-0.036	0.209	0.676	0.044	0.183	0.036	0.057	0.024
4185	SCCON	880831	1.03	1.12	550.0	4.68	22.2	10.0	0.012	0.303	-0.012	0.039	-0.020	0.549	0.952	0.075	0.171	0.039	0.052	0.023
4232	SCCON	880906	1.15	1.24	550.0	4.85	18.5	5.6	0.005	0.100	-0.013	0.045	-0.020	0.293	0.647	0.051	0.052	0.017	-0.011	0.003
4248	SCCON	880913	1.06	1.17	550.0	4.45	39.9	17.1	0.009	0.893	-0.005	0.052	-0.020	0.724	1.733	0.090	0.505	0.088	0.037	0.054
4277	SCCON	880920	1.00	1.09	525.0	4.29	54.0	25.5	0.015	0.180	-0.057	0.037	-0.013	1.060	3.265	0.585	0.069	0.113	-0.033	0.033
4284	SCCON	880927	1.03	1.29	550.0	4.88	18.7	5.0	0.004	0.102	-0.059	0.054	-0.010	0.320	0.454	0.038	0.065	0.015	-0.033	0.006
4332	SCCON	881018	1.07	1.01	575.0	4.33	53.6	24.1	0.014	0.548	-0.048	-0.033	-0.004	1.180	2.270	0.154	0.305	0.069	0.085	0.039
4333	SCCON	881025	1.08	0.99	550.0	4.20	73.1	34.7	0.015	1.278	-0.046	-0.033	-0.004	1.709	2.937	0.279	0.579	0.069	0.098	0.075
4367	SCCON	881101	0.87	1.22	579.0	4.84	18.7	7.0	0.012	0.155	-0.012	-0.046	-0.046	0.539	0.808	0.096	0.095	0.040	0.147	0.035
4396	SCCON	881115	0.93	1.05	400.0	5.54		8.6	0.016	1.235	-0.026	-0.097	-0.022	0.391	0.830	0.108	0.797	0.363	0.131	0.051
4423	SCCON	881122	0.97	1.19	575.0	4.51	36.7	14.3	0.014	0.679	-0.020	-0.057	-0.027	0.822	1.280	0.087	0.400	0.080	0.059	0.044
4453	SCCON	881206	1.05	1.06	130.0	4.09	88.4	39.4	0.025	0.494	-0.011	0.029	-0.029	2.426	3.905	0.507	0.221	0.152	0.132	0.019
4465	SCCON	881213	1.08	1.14	500.0	4.40	39.2	17.3	0.016	0.436	-0.017	0.036	-0.039	1.532	1.227	-0.002	0.238	0.147	0.106	0.011
4511	SCCON	881228	1.11	1.17	550.0	4.62	27.3	10.3	0.008	0.157	-0.002	-0.076	-0.013	0.513	1.256	0.088	0.085	0.023	0.037	0.008
3536	SCDEL	880112	1.01	1.11	550.0	4.27	52.1	25.5	0.013	0.907	-0.006	0.028	-0.056	1.447	2.205	0.158	0.526	0.054	0.067	0.067
3559	SCDEL	880119	0.99	1.10	550.0	4.33	49.2	23.3	0.013	0.739	-0.004	-0.030	-0.014	1.448	2.149	0.220	0.441	0.049	0.128	0.059
3604	SCDEL	880202	1.07	1.07	550.0	4.34	50.4	20.6	0.008	0.377	-0.019	0.039	-0.141	1.250	1.743	0.104	0.175	0.020	0.054	0.026
3623	SCDEL	880209	1.01	1.07	475.0	4.31	51.1	27.2	0.014	0.911	-0.013	0.043	-0.154	2.190	2.360	0.254	0.529	0.056	0.344	0.086
3643	SCDEL	880216	1.02	1.14	375.0	4.30	51.2	20.7	0.013	0.060	-0.007	0.036	-0.061	1.445	1.928	0.154	0.032	0.021	0.095	0.007

EPA State Operated Rain Network
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GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3675	SCDEL	880301	1115	880308	900	880315		1	0.02	25.0			3	
3702	SCDEL	880308	900	880315	800	880323		4	0.95	1637.0	17.4	4.41	3	
3723	SCDEL	880315	800	880322	1000	880329		1	0.59	1103.0	20.8	4.36		
3742	SCDEL	880322	1000	880329	1400	880406		2	0.50	1312.0	19.9	4.50	3	
3787	SCDEL	880405	1220	880412	1430	880421				3222.0	20.3	4.40	3	
3795	SCDEL	880412	1430	880419	1130	880425				900.0	41.5	4.14	3	33
3825	SCDEL	880419	1130	880426	1155	880503		3	0.37	241.0	28.0	4.25	3	
3856	SCDEL	880503	945	880510	1400	880517		2	0.21	200.0	68.2	3.87	3	
3880	SCDEL	880510	1400	880517	1420	880524		2	0.17	426.0	33.2	4.14	3	
3899	SCDEL	880517	1430	880524		880531		3	0.83	1652.0	20.7	4.28	3	34
3933	SCDEL	880531	930	880607	1100	880615		1	0.10	198.0	179.9	3.38	3	33
3954	SCDEL	880614	930	880621	1200	880627		3		3403.0	62.8	3.83	3	2133
3978	SCDEL	880621	1330	880628	1045	880706		1	0.12	255.0	75.3	3.70	13	
3989	SCDEL	880628	1045	880705	1045	880711		2	0.51	927.0	127.0	3.59	13	3299
4017	SCDEL	880705	1045	880712	1305	880722		1	0.18	139.0	590.0	2.88	3	3499
4057	SCDEL	880719	1100	880726	1138	880802		3	0.71	897.0	35.4	4.08	3	
4088	SCDEL	880726	1138	880802	1330	880809		3	0.89	2121.0	70.2	3.80	3	
3948	SCDEL	880727	1100	880614	1030	880624		2	1.25	2342.0	42.5	3.94	3	3334
4104	SCDEL	880802	1330	880809	1030	880815		3	0.19	428.0	28.0	4.22	3	
4128	SCDEL	880809	1030	880816	1130	880824		2	0.78	1235.0	13.0	4.54		
4152	SCDEL	880816	1142	880823	1115	880830		2	0.63	919.0	23.0	4.27	3	
4210	SCDEL	880823	1145	880830	916	880907		2		624.0	24.3	4.31	4	
4181	SCDEL	880830	914	880906	1030	880915				1787.0	12.4	4.56	3	
4233	SCDEL	880906	1030	880913	1115	880922		4	0.59	1036.0	7.1	4.90		
4249	SCDEL	880913	1111	880920	1115	880927				2388.0	30.1	4.26	3	
4285	SCDEL	880920	1115	880927	915	881011		2	0.27	503.0	21.0	4.48	3	
4286	SCDEL	880927	915	881004	1100	881011		3	2.67	5010.0	5.5	4.87		
4348	SCDEL	881018	1045	881025	1000	881109		2	0.63	1133.0	30.6	4.10		
4353	SCDEL	881025	1000	881101	1300	881109		3	1.43	2470.0	18.0	4.42	3	
4365	SCDEL	881101	1000	881107	1315	881116		2	0.34	284.0		4.66	3	

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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3675	SCDEL	880301	1.11	0.99	25.0	5.16		13.9	0.030	0.417	-0.006	0.025	0.017	1.910	2.128	0.452	0.339	0.187	0.454	0.076
3702	SCDEL	880308	1.00	1.18	550.0	4.47	36.5	14.3	0.008	0.137	-0.008	0.024	-0.006	0.946	1.484	0.176	0.078	0.022	0.066	0.010
3723	SCDEL	880315	0.92	1.17	475.0	4.38	43.0	16.6	-0.008	0.047	-0.025	-0.021	-0.018	0.994	1.653	0.207	0.024	0.019	0.032	0.004
3742	SCDEL	880322	0.94	1.09	550.0	4.56	26.4	18.0	0.019	0.942	-0.010	-0.040	-0.014	1.252	1.753	0.339	0.595	0.076	0.176	0.085
3787	SCDEL	880405	1.07	1.10	550.0	4.41	41.1	18.0	0.016	0.256	-0.016	0.047	-0.005	0.966	1.922	0.184	0.148	0.039	0.047	0.027
3795	SCDEL	880412	1.00	1.06	550.0	4.19	65.7	37.4	0.021	0.223	-0.014	0.052	-0.005	3.127	4.399	0.881	0.101	0.121	0.522	0.064
3825	SCDEL	880419	0.95	1.14	210.0	4.32	49.4	25.5	0.028	0.252	-0.008	0.037	-0.006	2.134	3.090	0.449	0.126	0.154	0.560	0.059
3856	SCDEL	880503	1.01	1.03	150.0	3.89	128.8	77.2	0.046	2.166	-0.005	-0.037	-0.004	4.576	8.453	1.311	1.333	0.226	0.588	0.204
3880	SCDEL	880510	0.97	1.07	375.0	4.19	71.0	33.2	0.029	0.152	-0.006	-0.012	-0.007	2.192	3.766	0.658	0.069	0.078	0.285	0.036
3899	SCDEL	880517	9999	9999	550.0	4.39	44.6	19.1	0.011	0.183	-0.033	-0.049	-0.004	1.174	2.084	0.336	0.092	0.038	0.114	0.023
3933	SCDEL	880531	1.05	1.09	150.0	3.41	398.3	173.5	0.091	0.529	-0.005	-0.018	-0.019	8.304	20.272	1.463	0.100	0.102	1.217	0.152
3954	SCDEL	880614	1.01	1.05	525.0	3.90	135.1	55.7	0.038	0.210	-0.004	-0.019	-0.001	2.586	5.362	0.497	0.046	0.060	0.085	-0.005
3978	SCDEL	880621	1.02	0.98	220.0	3.86	157.9	70.7	0.063	0.333	-0.006	-0.022	-0.002	3.520	7.016	0.760	0.115	0.113	0.397	0.046
3989	SCDEL	880628	9999	9999	450.0	3.64														
4017	SCDEL	880705	9999	9999	80.0	2.89														
4057	SCDEL	880719	1.09	1.01	550.0	4.14	84.0	32.6	0.020	0.173	-0.003	-0.107	-0.021	1.547	2.989	0.091	0.085	0.036	0.058	0.009
4088	SCDEL	880726	1.06	0.99	550.0	3.81	165.1	70.3	0.031	0.171	-0.003	0.026	-0.047	2.517	6.663	0.372	0.026	0.031	0.001	0.009
3948	SCDEL	880727	0.99	1.01	520.0	4.06	96.1	42.9	0.034	0.141	-0.003	0.017	-0.001	1.805	4.582	0.575	0.034	0.054	0.179	0.024
4104	SCDEL	880802	0.96	1.01	350.0	4.29	58.6	25.7	0.033	0.216	-0.003	-0.026	-0.024	1.818	2.047	0.311	0.149	0.051	0.104	0.024
4128	SCDEL	880809	1.12	1.12	550.0	4.57	33.1	11.0	-0.024	0.162	-0.006	0.025	-0.029	0.521	1.043	-0.004	0.087	0.011	-0.019	0.012
4152	SCDEL	880816	1.08	1.07	550.0	4.31	54.5	20.5	0.017	0.076	-0.005	0.025	-0.018	0.907	1.994	0.045	0.033	0.017	0.038	0.009
4210	SCDEL	880823	1.01	1.08	550.0	4.33	48.3	22.9	0.017	0.583	-0.009	-0.053	-0.036	0.968	2.384	0.223	0.309	0.026	0.109	0.046
4181	SCDEL	880830	0.95	1.16	550.0	4.57	29.2	11.0	0.008	0.099	-0.008	-0.037	-0.026	0.557	1.129	0.100	0.057	0.014	0.038	0.007
4233	SCDEL	880906	1.02	1.33	550.0	4.97	13.3	4.1	0.005	0.039	-0.012	0.050	-0.021	0.393	0.379	0.081	0.030	0.020	-0.011	-0.002
4249	SCDEL	880913	0.98	1.08	550.0	4.26	58.8	27.2	0.009	0.938	-0.005	0.031	-0.020	1.171	2.531	0.314	0.515	0.032	0.026	0.064
4285	SCDEL	880920	0.95	1.13	500.0	4.46	38.7	15.9	0.015	0.060	-0.060	0.037	-0.009	1.071	1.669	0.324	0.038	0.026	0.072	0.006
4286	SCDEL	880927	1.05	1.43	550.0	4.94	14.7	3.5	0.005	0.035	-0.060	0.044	-0.009	0.279	0.290	-0.015	0.023	0.005	-0.033	-0.003
4348	SCDEL	881018	1.06	1.01	579.0	4.23	65.4	29.0	0.011	0.309	-0.004	-0.031	-0.007	1.472	2.814	0.283	0.155	0.030	0.064	0.021
4353	SCDEL	881025	1.06	1.09	575.0	4.48	38.1	14.9	0.004	0.211	-0.004	-0.029	-0.011	0.823	1.476	0.104	0.124	0.008	0.036	0.018
4365	SCDEL	881101	0.92	1.25	250.0	4.72	22.6	8.8	0.015	0.169	-0.012	-0.046	-0.047	0.592	1.141	0.164	0.110	0.023	0.139	0.023

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GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
4382	SCDEL	881115	930	881122	1035	881117		1	0.88	1776.0		4.66	3	34
4418	SCDEL	881122	1035	881129	945	881206		3	0.96	1650.0	25.3	4.15		
4512	SCDEL	881220	1230	881228	1525	890104		1	0.03	174.0	57.9	3.87	3	
4513	SCDEL	881228	1525	890103	1130	890119		5	0.86	1626.0	29.4	4.06		
3542	SCLON	880105	1000	880119	1000	880128	3.00	8	2.28	4623.0	11.0	4.64	3	
3560	SCLON	880119	1000	880126	1030	880202	3.00	3	1.61	2845.0	18.9	4.40	3	
3583	SCLON	880126	1030	880202	1030	880210	3.00			257.0	58.2	4.04	3	
3605	SCLON	880202	1030	880209	1030	880217		3	1.73	2588.0	19.1	4.34	3	
3624	SCLON	880209	1030	880216	1000	880223		1	0.54	956.0	30.3	4.15	3	
3644	SCLON	880216	1000	880223	1000	880229		2	0.31	505.0	25.1	4.21	3	
3665	SCLON	880223	1000	880301	1030	880310				14.0			3	
3676	SCLON	880301	1030	880308	1100	880315		2	0.12	192.0	32.1	4.20	3	
3703	SCLON	880308	1100	880316	1045	880323		1	0.66	730.0	16.5	4.54	3	
3729	SCLON	880316	1045	880322	1100	880402		1	0.35	510.0	17.4	4.46	3	
3743	SCLON	880322	1100	880329	1100	880406		1	0.78	1244.0	18.6	4.57	3	
3767	SCLON	880329	1100	880405	1000	880415		4	1.78	2927.0	26.2	4.36	3	
3788	SCLON	880405	1000	880412	1000	880421		4	3.08	5164.0	15.5	4.53	3	
3812	SCLON	880412	1000	880419	900	880428		3	0.74	1204.0	20.5	4.40	3	
3859	SCLON	880503	930	880510	930	880517		1	0.17	775.0	26.2	4.20	3	34
3881	SCLON	880510	930	880517	930	880524		2	0.35	579.0	40.3	4.08	3	
3900	SCLON	880517	930	880524	930	880531		1	0.01	98.0			3	99
3955	SCLON	880614	930	880621	930	880627		4	0.83	1350.0	75.8	4.10	3	
3979	SCLON	880621	930	880628	930	880706		1	0.02	38.0			3	33
3991	SCLON	880628	930	880705	1000	880712		4	2.06	3559.5	43.1	4.05	3	
4003	SCLON	880705	1000	880712	930	880718		2	0.18	334.0	75.1	3.79	3	
4042	SCLON	880712	930	880719	1000	880729		2	0.03	80.0			3	99
4058	SCLON	880719	1000	880726	900	880802		2	1.62	2577.0	30.5	4.17	3	33
4075	SCLON	880726	900	880802	930	880808		2	1.07	1744.0	30.2	4.21	3	
4109	SCLON	880802	930	880809	900	880817		2	3.24	5458.0	13.0	4.53	3	

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									mg/l											
4382	SCDEL	881115	0.97	1.28	550.0	4.75	21.9	6.9	0.019	0.141	-0.016	-0.066	-0.032	0.404	0.745	0.046	0.102	0.012	0.038	0.012
4418	SCDEL	881122	1.00	1.11	575.0	4.31	56.0	25.2	0.019	1.060	-0.015	-0.072	-0.029	1.139	2.552	0.259	0.625	0.033	0.089	0.079
4512	SCDEL	881220	1.02	1.06	100.0	4.04	92.1	53.2	0.047	1.554	-0.002	-0.078	-0.013	3.619	5.755	0.909	1.319	0.140	0.317	0.124
4513	SCDEL	881228	0.99	1.15	550.0	4.25	58.0	24.3	0.012	0.210	-0.002	-0.082	-0.011	1.249	2.802	0.300	0.123	0.055	0.111	0.018
3542	SCLON	880105	1.03	1.23	550.0	4.70	23.1	7.8	-0.003	0.161	-0.005	0.032	-0.050	0.505	0.746	0.051	0.084	0.021	0.015	0.011
3560	SCLON	880119	1.07	1.12	550.0	4.48	35.3	15.4	0.008	0.426	-0.004	-0.033	-0.014	0.892	1.555	0.122	0.231	0.037	0.047	0.031
3583	SCLON	880126	0.98	1.06	200.0	4.05	86.1	56.5	0.033	4.341	-0.019	-0.008	0.015	2.817	4.032	0.492	2.362	0.176	0.232	0.296
3605	SCLON	880202	1.03	1.12	550.0	4.45	38.2	15.5	0.011	0.284	-0.019	0.039	-0.142	0.843	1.468	0.155	0.126	0.021	0.021	0.020
3624	SCLON	880209	1.03	1.08	550.0	4.27	59.1	24.7	0.016	0.255	-0.013	0.044	-0.149	1.807	2.116	0.270	0.090	0.034	0.113	0.020
3644	SCLON	880216	1.05	1.12	130.0	4.31	51.8	20.6	0.012	0.095	-0.007	0.044	-0.053	1.224	2.061	0.167	0.059	0.118	0.001	0.007
3665	SCLON	880223	9999	9999	10.0	4.10														
3676	SCLON	880301	1.01	1.09	170.0	4.37	47.0	28.1	0.028	0.761	-0.006	0.025	-0.013	2.281	3.452	0.767	0.515	0.178	0.274	0.069
3703	SCLON	880308	0.99	1.13	550.0	4.56	30.1	13.9	0.008	0.251	-0.008	0.027	-0.007	0.939	1.593	0.251	0.159	0.039	0.127	0.022
3729	SCLON	880316	0.99	1.18	450.0	4.48	37.0	13.7	0.016	0.085	-0.019	-0.028	-0.017	0.675	1.613	0.103	0.052	0.046	0.114	0.007
3743	SCLON	880322	0.94	1.12	550.0	4.61	28.9	15.9	0.008	0.789	-0.010	-0.044	-0.019	0.946	1.835	0.455	0.462	0.046	0.101	0.059
3767	SCLON	880329	1.00	1.11	550.0	4.38	44.1	24.9	0.015	1.307	-0.007	0.038	-0.011	1.385	2.564	0.433	0.789	0.071	0.106	0.098
3788	SCLON	880405	1.00	1.24	550.0	4.49	31.3	13.0	0.010	0.127	-0.016	0.044	-0.005	0.774	1.535	0.205	0.068	0.032	0.040	0.010
3812	SCLON	880412	0.95	1.19	550.0	4.40	41.9	18.0	0.011	0.139	-0.009	0.040	-0.005	1.153	2.210	0.323	0.066	0.081	0.205	0.021
3859	SCLON	880503	1.04	1.11	550.0	4.25	58.2	25.3	0.014	0.434	-0.005	0.042	-0.005	1.055	2.757	0.243	0.229	0.039	0.095	
3881	SCLON	880510	1.00	1.05	525.0	4.11	82.9	40.5	0.025	0.209	-0.006	0.023	-0.007	2.587	4.562	0.614	0.081	0.145	0.427	0.060
3900	SCLON	880517	9999	9999	100.0	4.41														
3955	SCLON	880614	1.09	0.95	550.0	3.86	162.4	72.2	0.042	0.329	-0.005	-0.019	-0.001	3.532	7.162	0.791	0.083	0.115	0.219	0.020
3979	SCLON	880621	1.05	0.94	42.0	3.84		94.3	0.127	0.479	-0.006	-0.021	-0.002	4.932	11.685	2.357	0.217	0.316	0.607	0.078
3991	SCLON	880628	1.02	1.06	550.0	4.05	98.5	40.1	0.021	0.173	-0.010	0.013	-0.027	1.708	4.221	0.479	0.051	0.020	0.031	0.009
4003	SCLON	880705	1.06	0.97	320.0	3.84	160.0	73.3	0.041	0.298	-0.009	0.004	-0.012	3.297	7.511	0.803	0.117	0.107	0.185	0.035
4042	SCLON	880712	9999	9999	70.0	4.16														
4058	SCLON	880719	1.02	1.04	550.0	4.20	74.5	28.6	0.017	0.117	-0.003	-0.108	-0.020	1.732	2.563	0.229	0.037	0.029	0.102	0.012
4075	SCLON	880726	1.04	1.00	550.0	4.17	77.9	33.7	0.018	0.117	-0.010	-0.026	-0.043	1.512	3.622	0.475	0.051	0.061	0.046	0.005
4109	SCLON	880802	1.05	1.10	550.0	4.60	27.4	11.1	0.011	0.073	-0.004	0.037	-0.018	0.721	1.045	0.119	0.037	0.029	0.026	0.005

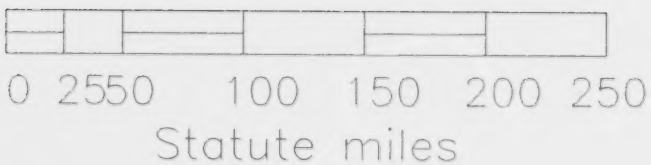
EPA State Operated Rain Network
1988 Sampling and Field Data

GGC ID	Site Code	Begin Day	Begin Time	End Day	End Time	Date Rec'd	Type	# Rain Events	Precip inches	Field Wt gm	Field Cond µmho/cm	Field pH	Comment Codes 1	Comment Codes 2
4120	SCLON	880809	900	880816	1000	880822		1	0.04	82.0			3	
4153	SCLON	880816	1000	880823	830	880830		3	0.95	1598.0	29.2	4.18		
4211	SCLON	880823	830	880830	930	880902		1	0.06	144.0			3	
4182	SCLON	880830	930	880906	1000	880913		2	2.44	3767.0	8.8	4.70		
4234	SCLON	880906	1000	880913	930	880922		4	0.23	386.0	18.5	4.65	3	
4250	SCLON	880913	930	880920	1006	880927		3	1.91	2964.0	27.6	4.17	3	
4266	SCLON	880920	1000	880927	845	881005	3.00	1	0.01	25.0				
4268	SCLON	880927	845	881004	900	881011		3	3.67	4859.0	9.6	4.73	3	34
4321	SCLON	881018	930	881025	915	881031				1166.0	21.1	4.24	3	
4334	SCLON	881025	915	881101	1300	881109		2	0.41	665.0	24.6	4.26		
4366	SCLON	881101	1300	881107	1100	881116		2	1.26	2041.0		4.65	3	33
4379	SCLON	881107	1100	881115	1130	881117		2	0.17	331.0		3.92	3	3334
4400	SCLON	881115	1130	881122	1035	881129		4	1.06	1755.0		4.17		
4419	SCLON	881122	1035	881129	1045	881206		3	1.50	2437.0	10.8	4.56		
4454	SCLON	881206	1020	881213	950	881219	3.00	8		45.0			3	33
4514	SCLON	881220	1020	881228	1115	890104		7	0.98	1502.0	45.2	3.95		
4515	SCLON	881228	1115	890103	1000	890119		4	2.27	3672.0	9.9	4.55		

EPA State Operated Rain Network
1988 Laboratory Data

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4120	SCLON	880809	0.94	0.96	80.0	4.66	34.1	15.8	0.062	0.463	-0.005	0.035	-0.025	1.887	0.754	0.310	0.311	0.384	0.076	0.016
4153	SCLON	880816	1.04	1.05	525.0	4.19	71.7	28.1	0.019	0.120	-0.005	-0.015	-0.017	1.192	2.732	0.148	0.045	0.042	0.029	0.006
4211	SCLON	880823	0.96	1.08	150.0	3.96	114.5	47.2	0.036	0.321	-0.009	-0.054	-0.037	2.543	4.243	0.424	0.128	0.069	0.087	0.024
4182	SCLON	880830	0.99	1.20	550.0	4.75	19.5	7.4	0.009	0.101	-0.009	0.039	-0.025	0.428	0.742	0.069	0.060	0.031	0.041	0.005
4234	SCLON	880906	1.03	1.15	375.0	4.55	32.2	13.4	0.018	0.287	-0.012	0.059	-0.021	1.062	1.248	0.190	0.173	0.130	0.042	0.011
4250	SCLON	880913	0.92	1.15	550.0	4.20	62.9	25.7	0.014	0.158	-0.005	0.051	-0.019	1.371	2.418	0.317	0.061	0.021	0.037	0.009
4266	SCLON	880920	1.08	1.02	30.0	3.88		63.4	0.103	0.315	-0.052	0.708	-0.018	4.013	4.981	0.216	0.248	0.096	0.617	0.038
4268	SCLON	880927	0.97	1.23	550.0	4.69	23.6	8.6	0.003	0.257	-0.053	0.047	-0.017	0.421	0.886	0.084	0.142	0.030	0.037	0.020
4321	SCLON	881018	1.09	1.04	550.0	4.37	47.7	19.5	0.018	0.081	-0.082	0.041	-0.009	1.290	1.721	0.149	0.034	0.022	0.064	0.006
4334	SCLON	881025	1.08	1.03	550.0	4.31	54.9	22.6	0.012	0.114	-0.041	-0.033	-0.004	1.132	2.291	0.139	0.070	0.067	0.056	0.007
4366	SCLON	881101	0.96	1.20	579.0	4.79	19.0	7.5	0.016	0.150	-0.012	-0.046	-0.047	0.564	0.803	0.147	0.092	0.050	0.040	0.007
4379	SCLON	881107	1.01	1.05	250.0	4.03	96.5	46.8	0.032	1.225	-0.013	-0.059	-0.035	2.517	4.245	0.326	0.745	0.147	0.181	0.089
4400	SCLON	881115	0.99	1.10	575.0	4.31	51.3	25.4	0.017	0.871	-0.018	-0.058	-0.039	1.449	2.503	0.369	0.506	0.053	0.091	0.066
4419	SCLON	881122	0.96	1.16	575.0	4.76	22.2	9.5	0.012	0.457	-0.016	-0.070	-0.029	0.475	1.074	0.174	0.260	0.041	0.068	0.033
4454	SCLON	881206	1.14	1.72	42.0	4.40		11.8	0.059	0.413	-0.011	-0.141	-0.034	1.040	1.755	0.245	0.029	0.010	0.075	0.016
4514	SCLON	881220	0.98	1.08	550.0	4.09	84.4	42.1	0.032	1.072	-0.002	-0.085	-0.011	3.159	3.777	0.707	0.697	0.085	0.100	0.082
4515	SCLON	881228	0.99	1.40	550.0	4.71	23.3	6.3	0.007	0.042	-0.019	-0.044	-0.038	0.253	0.850	0.053	0.018	0.018	-0.021	-0.003

South Dakota



□ Major city (for reference)

* EPA Acid Rain Site

SOUTH DAKOTA

SITE	SITE NAME	NEAREST CITY	COUNTY	SAMPLING PERIOD[1] BEGIN	END	#SAMPLES	%NON-VOID[2]
SDAPR	Pierre	Pierre	Hughes	NOV 86 -	MAR 88	4	75.0
SDBPR	Pierre Colocated	Pierre	Hughes	NOV 86 -	MAR 88	4	75.0
SDBGP	Buffalo Gap	Hot Springs	Custer	NOV 86 -	JAN 87	---	---
SDCUS	Custer State Park	Hermosa	Custer	SEP 87 -	AUG 88	20	85.0

(1) "BEGIN" was JAN 88 and "END" was DEC 88 unless otherwise noted. For sites which were not operational during 1988, the date range of operation is given.

(2) Percentage of samples received which were not voided by GGC due to contamination.

Figure 2-1 (continued)
Site: SDAPR
PPTN Data Plots, Jan 1988 - Dec 1988

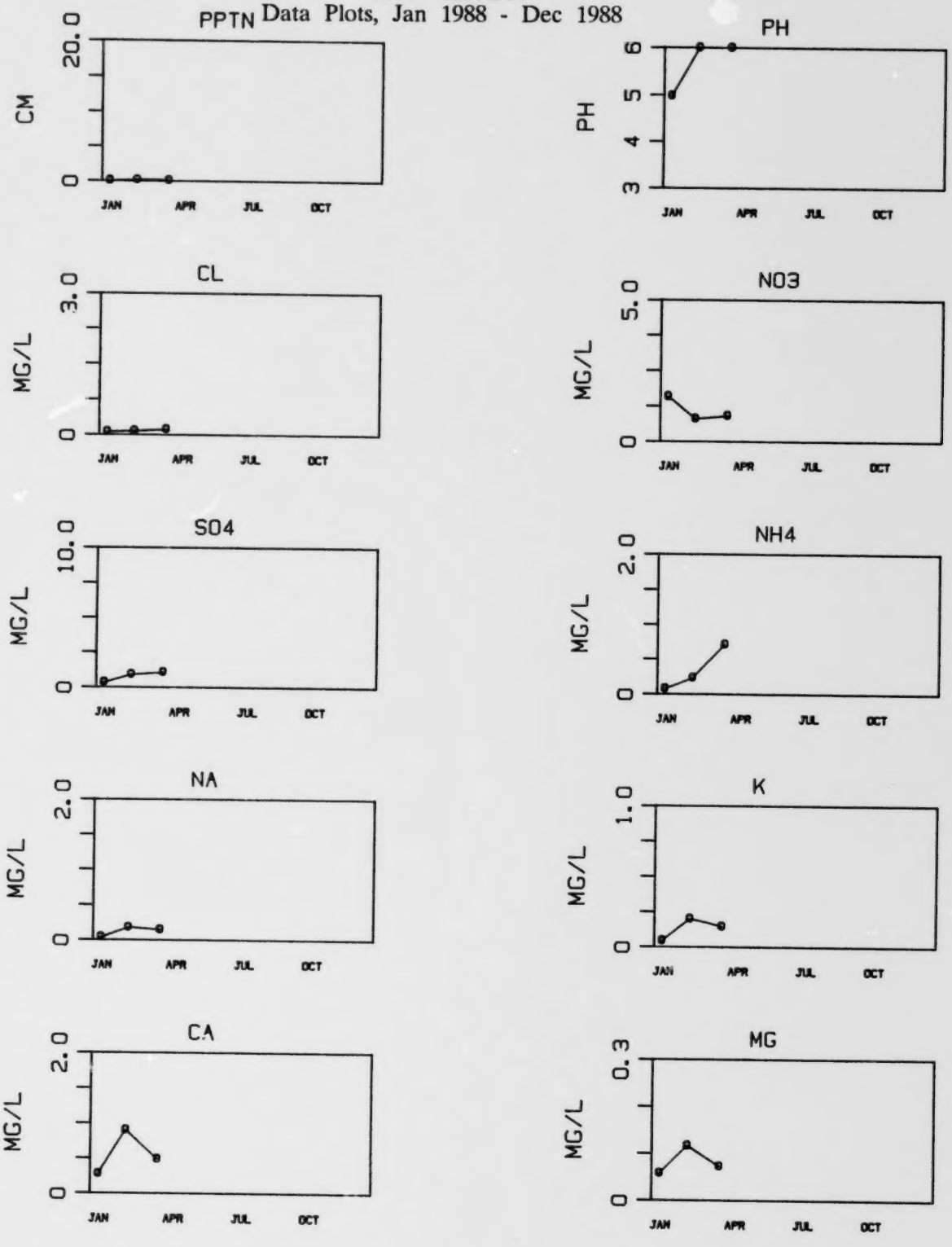


Figure 2-1 (continued)
Site: SDBPR
Data Plots, Jan 1988 - Dec 1988

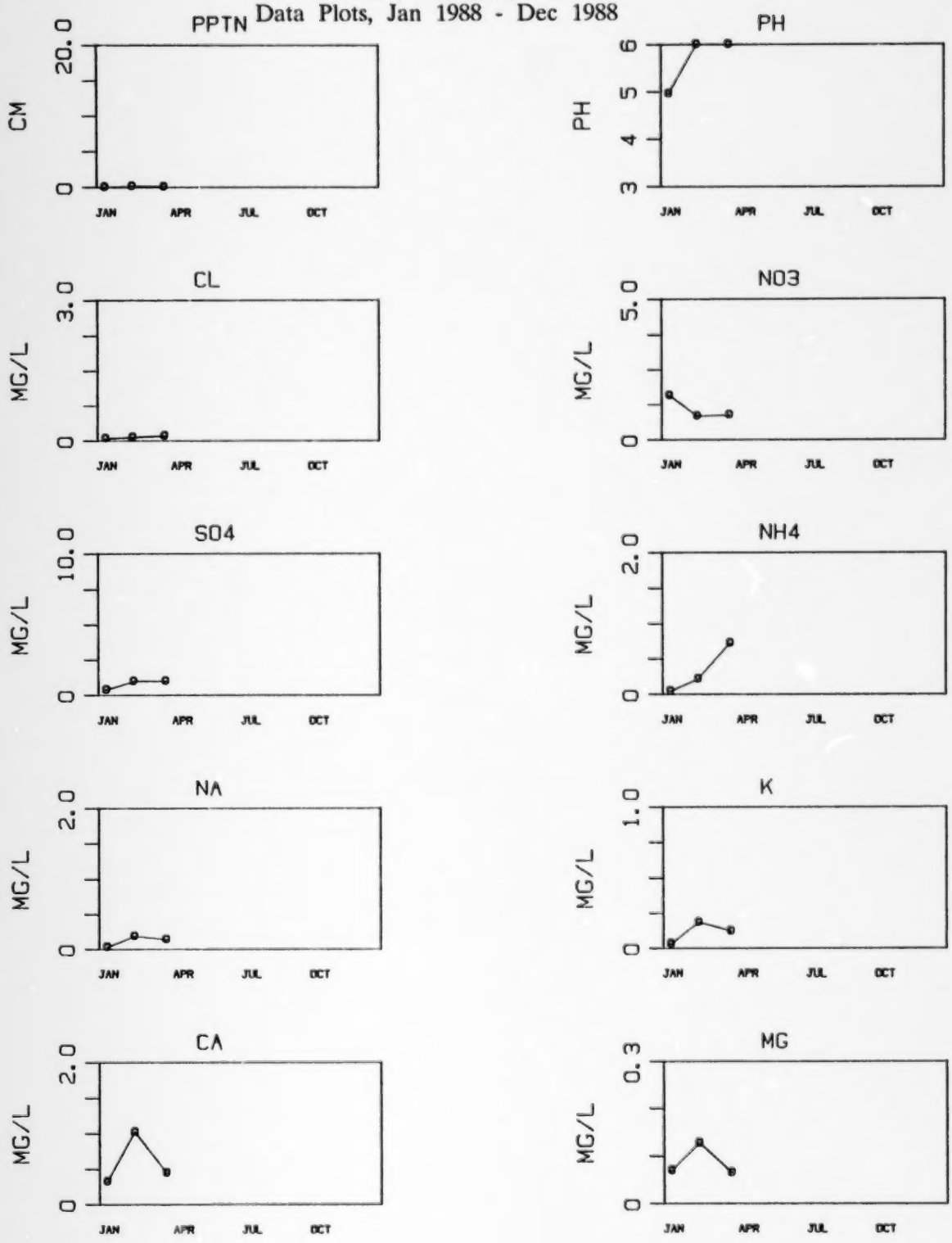
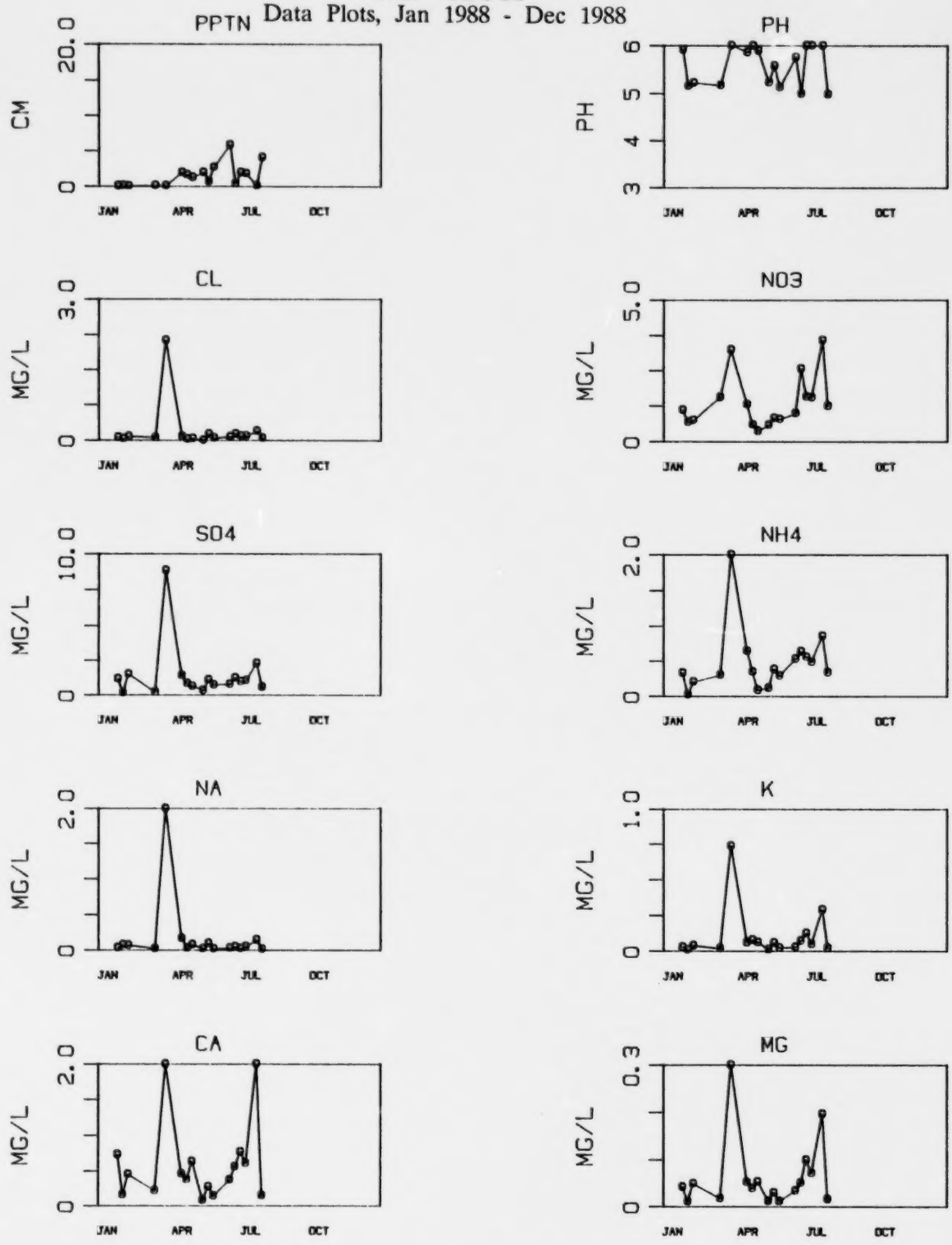


Figure 2-1 (continued)
Site: SDCUS
Data Plots, Jan 1988 - Dec 1988



SD88

09-25-1989
Page 1

EPA State Operated Rain Network
1988 Sampling and Field Data

GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3531	SDAPR	880111	1600	880119	900	880126	1.00	1	0.02	26.0				
3615	SDAPR	880209	900	880216	900	880222		2	0.13	114.0		6.86	3	3399
3645	SDAPR	880216	900	880223	900	880229	1.00	2	0.06	51.5			3	33
3754	SDAPR	880329	900	880405	900	880412		1	0.04	44.0			3	
3537	SDBPR	880111	1600	880119	900	880127	1.00	1	0.02	-14.0				
3625	SDBPR	880209	900	880216	900	880223		2	0.13	114.0		5.18	3	3399
3646	SDBPR	880216	900	880223	900	880229	1.00	2	0.06	46.0			3	33
3755	SDBPR	880329	900	880405	900	880412		1	0.04	41.5			3	
3573	SDCUS	880126	1600	880202	900	880209	1.00	2		40.5				
3606	SDCUS	880202	900	880209	1600	880217	1.00	2		49.0				
3626	SDCUS	880209	1600	880216	900	880223		1	0.02	64.0			3	
3691	SDCUS	880308	900	880315	1600	880321		2	0.07	44.5			3	99
3724	SDCUS	880315	1600	880322	900	880329	1.00	1	0.04	59.0				
3744	SDCUS	880322	900	880329	900	880406		1	0.02	28.0			3	3399
3757	SDCUS	880329	900	880405	900	880414		1	0.03	36.5			3	
3818	SDCUS	880419	900	880426	1045	880429	2.00	5	0.76	921.5	11.0	5.86	3	
3835	SDCUS	880426	1045	880503	745	880510		1	0.63	1425.5	68.0	6.00	3	33
3846	SDCUS	880503	745	880510	920	880513		2	0.49	811.5	4.6	6.46	3	33
3901	SDCUS	880517	900	880524	900	880531		3	0.77	1188.5	6.2	4.79	3	
3917	SDCUS	880524	900	880531	900	880607		1	0.27	508.5	9.0	4.95	3	
3939	SDCUS	880531	900	880614	900	880618		2	1.05	1782.5	11.8	4.66	3	
3973	SDCUS	880621	900	880628	900	880705		3	2.30	3706.5	6.9	5.62	3	
4011	SDCUS	880628	900	880705	900	880719		2	0.16	256.0	13.8	4.13	3	
4006	SDCUS	880705	900	880712	900	880718		3	0.76	1421.5	11.5	6.06	3	33
4032	SDCUS	880712	900	880719	900	880725		3	0.71	1396.0	9.7	5.81	3	33
4064	SDCUS	880726	900	880802	900	880805		1	0.03	39.5			3	

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EPA State Operated Rain Network
1988 Laboratory Data

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3531	SDAPR	880111	1.00	1.12	25.0	4.98		6.9	0.009	0.060	-0.006	0.034	-0.053	1.580	0.340	0.075	0.039	0.044	0.275	0.058
3615	SDAPR	880209	9999	9999	112.0	5.40														
3645	SDAPR	880216	0.45	1.13	50.0	6.39		6.9	0.019	0.084	-0.007	0.031	-0.048	0.802	0.908	0.231	0.177	0.201	0.901	0.116
3754	SDAPR	880329	0.51	1.09	42.0	6.39		7.8	0.015	0.116	-0.016	-0.040	-0.029	0.912	1.060	0.712	0.147	0.146	0.485	0.073
3537	SDBPR	880111	0.97	1.09	30.0	4.96		7.4	0.012	0.051	-0.005	0.029	-0.054	1.580	0.391	0.046	0.031	0.032	0.325	0.070
3625	SDBPR	880209	9999	9999	100.0	5.31														
3646	SDBPR	880216	0.44	1.14	42.0	6.32		7.3	0.016	0.077	-0.006	0.035	-0.044	0.840	0.975	0.216	0.186	0.183	1.020	0.127
3755	SDBPR	880329	0.52	1.16	40.0	6.35		7.2	0.014	0.109	-0.017	0.051	-0.030	0.879	0.994	0.721	0.140	0.121	0.448	0.065
3573	SDCUS	880126	0.72	1.02	40.0	5.91		7.4	0.014	0.061	-0.010	-0.017	-0.014	1.102	1.154	0.330	0.032	0.028	0.726	0.042
3606	SDCUS	880202	0.81	1.19	50.0	5.15		3.7	0.007	0.037	-0.019	0.026	-0.143	0.688	0.152	0.021	0.074	0.007	0.159	0.011
3626	SDCUS	880209	0.99	1.01	50.0	5.22		8.2	0.011	0.081	-0.013	0.042	-0.145	0.749	1.496	0.201	0.070	0.038	0.452	0.049
3691	SDCUS	880308	9999	9999	42.0	5.91														
3724	SDCUS	880315	0.84	1.06	45.0	5.17		6.2	-0.008	0.055	-0.024	-0.022	-0.018	1.562	0.209	0.301	0.021	0.018	0.217	0.018
3744	SDCUS	880322	9999	9999	25.0	6.92														
3757	SDCUS	880329	0.57	0.98	50.0	6.79		60.0	0.057	2.124	-0.009	0.773	-0.012	3.234	8.836	2.355	4.125	0.736	4.124	0.409
3818	SDCUS	880419	0.75	1.08	320.0	5.86		8.6	0.009	0.081	-0.009	0.069	-0.006	1.307	1.388	0.642	0.167	0.059	0.456	0.052
3835	SDCUS	880426	0.64	1.10	375.0	6.00		5.0	-0.008	0.022	-0.007	0.054	-0.008	0.599	0.830	0.347	0.026	0.078	0.377	0.039
3846	SDCUS	880503	0.45	1.23	330.0	5.89		3.9	0.008	0.037	-0.005	0.034	-0.012	0.368	0.610	0.089	0.077	0.063	0.630	0.053
3901	SDCUS	880517	0.89	1.12	370.0	5.23	12.4	3.7	-0.006	-0.019	-0.035	-0.050	-0.004	0.581	0.335	0.116	0.020	0.011	0.081	0.011
3917	SDCUS	880524	0.87	0.99	330.0	5.58		6.9	0.007	0.130	-0.003	-0.041	-0.015	0.824	1.090	0.385	0.096	0.058	0.274	0.030
3939	SDCUS	880531	0.97	1.20	375.0	5.13	13.1	5.6	0.012	0.047	-0.003	0.066	-0.014	0.789	0.725	0.290	0.016	0.023	0.142	0.011
3973	SDCUS	880621	0.65	1.01	350.0	5.76		6.7	0.017	0.077	-0.008	-0.026	-0.001	1.000	0.783	0.535	0.028	0.029	0.371	0.034
4011	SDCUS	880628	0.89	1.00	200.0	4.99	16.4	13.6	0.024	0.133	-0.007	0.025	-0.013	2.567	1.235	0.638	0.049	0.073	0.557	0.051
4006	SDCUS	880705	0.63	0.96	350.0	6.06		9.8	0.017	0.086	0.066	0.061	-0.010	1.580	0.953	0.560	0.021	0.126	0.766	0.099
4032	SDCUS	880712	0.78	0.99	400.0	6.09		8.5	0.014	0.091	0.029	0.057	-0.025	1.552	1.040	0.489	0.050	0.050	0.607	0.071
4064	SDCUS	880726	0.64	1.03	42.0	6.53		20.0	0.050	0.195	-0.002	0.161	-0.038	3.572	2.283	0.860	0.147	0.290	2.139	0.196

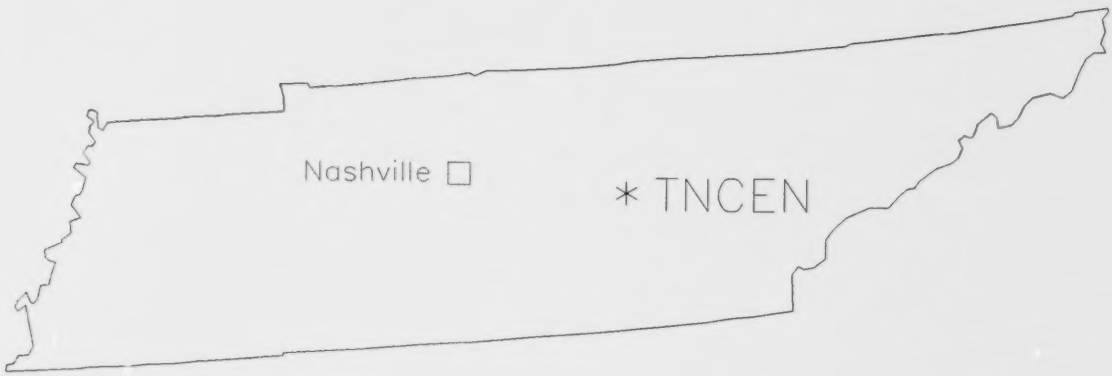
EPA State Operated Rain Network
1988 Sampling and Field Data

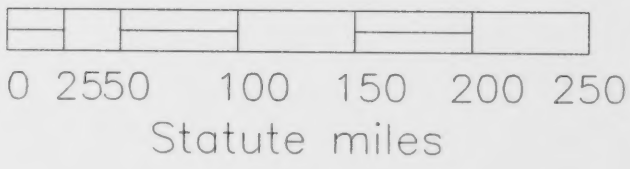
GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
4105	SDCUS	880802	900	880809	815	880815		3	1.60	2800.5	8.9	4.76		
4121	SDCUS	880809	815	880816	900	880822		1	0.15	256.5	21.5	6.14	3	3399

EPA State Operated Rain Network
1988 Laboratory Data

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4105	SDCUS	880802	0.92	1.13	330.0	4.98	18.2	7.3	0.020	0.048	-0.003	0.045	-0.023	1.246	0.578	0.340	0.013	0.022	0.147	0.016
4121	SDCUS	880809	9999	9999	240.0	6.19														

Tennessee





□ Major city (for reference)

* EPA Acid Rain Site

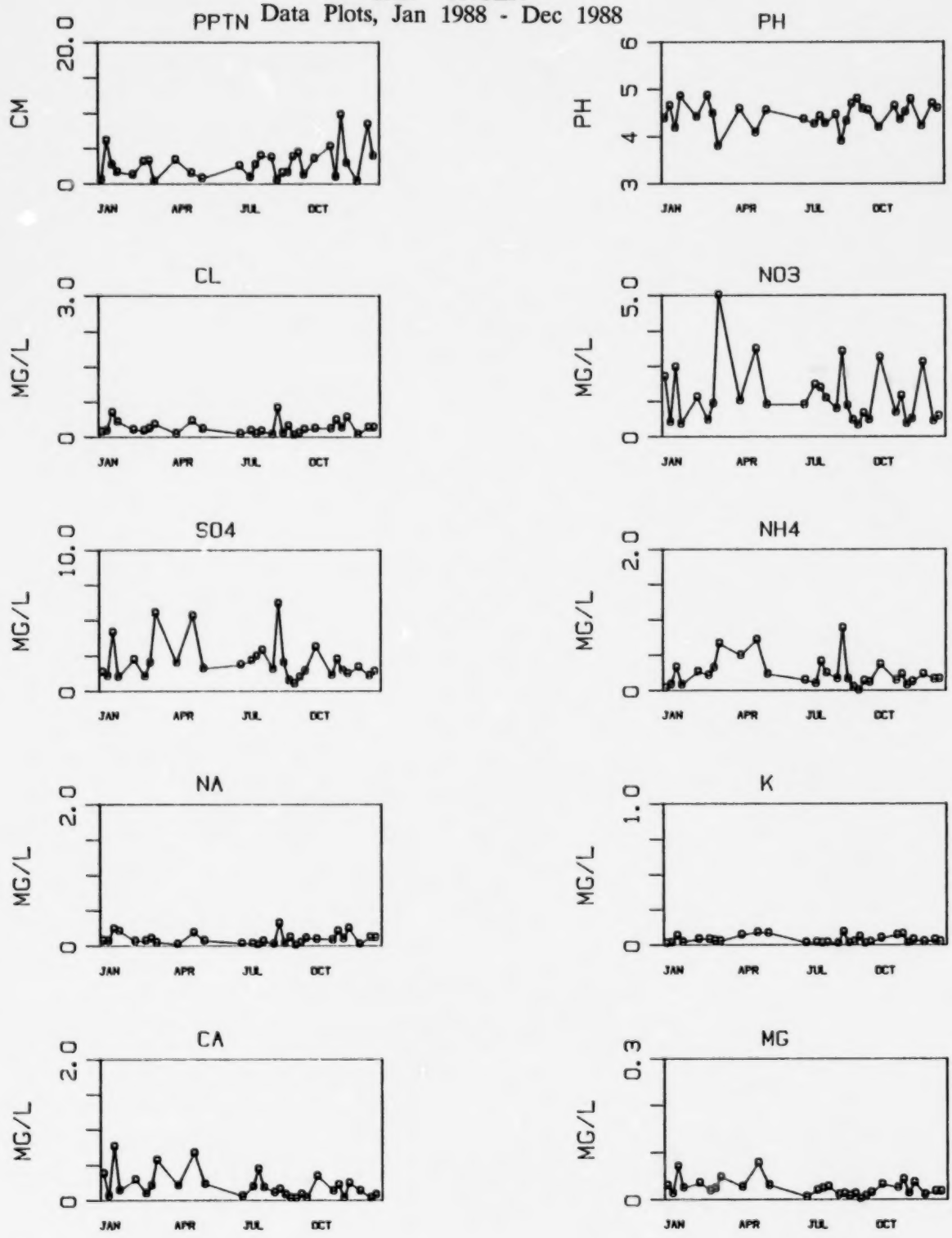
TENNESSEE

SITE	SITE NAME	NEAREST CITY	COUNTY	SAMPLING PERIOD(1) BEGIN	END	#SAMPLES	%NON-VOID(2)
TNCEN	Center Hill Res	Smithville	De Kalb			34	100.0

(1) "BEGIN" was JAN 88 and "END" was DEC 88 unless otherwise noted. For sites which were not operational during 1988, the date range of operation is given.

(2) Percentage of samples received which were not voided by GGC due to contamination.

Figure 2-1 (continued)
Site: TNCEN
PPTN Data Plots, Jan 1988 - Dec 1988



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EPA State Operated Rain Network
1988 Sampling and Field Data

GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3506	TNCEN	880105	1200	880112	1200	880120	11.00	1	0.25	1061.0	21.7	4.42	3	21
3543	TNCEN	880112	1200	880119	1200	880128	10.00	4	2.41	4719.0	13.3	4.62	3	21
3561	TNCEN	880119	1200	880126	1200	880202	10.00	2	1.04	1819.0	42.1	4.16	3	21
3574	TNCEN	880126	1200	880202	1200	880209	10.00	2	0.64	1763.0	11.2	4.74		2133
3627	TNCEN	880202	1200	880209	1200	880223	10.00	3	0.34	520.0	31.3	4.20	3	2134
3653	TNCEN	880216	1200	880223	1200	880302	10.00	2	0.50	818.0	23.2	4.40	3	2133
3677	TNCEN	880301	1200	880308	1200	880315		2	1.22	2272.0	11.2	4.74	3	
3704	TNCEN	880308	1200	880315	1200	880323	2.00	5	1.27	2281.0	22.5	4.41	3	
3715	TNCEN	880315	1200	880322	1200	880328		1	0.13	228.0		3.81	3	
3774	TNCEN	880329	1200	880405	1200	880418		6	1.80	3433.0	27.1	4.30	3	34
3813	TNCEN	880412	1200	880419	1200	880428		4	1.32	2348.0	19.7	4.56	3	
3860	TNCEN	880503	1200	880510	1200	880517		4	0.58	1054.0	48.8	4.59	3	
3902	TNCEN	880517	1200	880524	1200	880531		2	0.31	618.0	17.8	4.51	3	
3994	TNCEN	880628	1200	880705	1200	880713		3	0.03	69.0			3	34
4004	TNCEN	880705	1200	880712	1200	880718		2	0.98	1818.0	22.4	4.37	3	
4031	TNCEN	880712	1200	880719	1200	880725		2	1.96	2578.0	9.1	4.82	3	3334
4059	TNCEN	880719	1200	880726	1200	880802		2	0.37	645.0	30.2	4.25	3	
4094	TNCEN	880726	1200	880802	1200	880812		3	1.04	1982.0	22.6	4.43	3	
4122	TNCEN	880802	1200	880809	1200	880822		2	1.55	2280.0	28.1	4.17	3	
4154	TNCEN	880816	1200	880823	1200	880830				2498.0	18.8	4.47	3	
4212	TNCEN	880823	1200	880830	1200	880907		2	0.22	378.0	64.9	3.93	3	
4186	TNCEN	880830	1200	880906	1200	880913		2	0.60	1168.0	22.1	4.35	3	
4251	TNCEN	880906	1200	880913	1200	880927		1		1084.0	11.6	4.64		
4197	TNCEN	880913	1200	880920	1200	880923		2	1.49	2519.0	9.4	4.84	3	
4267	TNCEN	880920	1200	880927	1200	881005		2	1.72	3026.0	13.9	4.57	3	
4271	TNCEN	880927	1200	881004	1200	881011		2	0.50	891.0	15.8	4.54	3	
4349	TNCEN	881011	1200	881101	1200	881109		2		2399.0	36.6	4.22	3	
4369	TNCEN	881101	1200	881108	1200	881116		3	2.08	3820.0	13.4	4.66	3	
4391	TNCEN	881108	1200	881115	1200	881117		3	0.40	711.0	23.2	4.40	3	
4420	TNCEN	881115	1200	881122	1200	881206		3	3.85	7330.0	14.4	4.35	3	

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EPA State Operated Rain Network
1988 Laboratory Data

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3506	TNCEN	880105	0.98	1.14	425.0	4.38	42.7	18.4	0.012	0.114	-0.083	0.017	-0.149	2.122	1.353	0.035	0.076	0.011	0.381	0.030
3543	TNCEN	880112	1.00	1.24	430.0	4.65	26.0	9.0	-0.003	0.134	-0.005	0.027	-0.049	0.503	1.068	0.085	0.072	0.015	0.067	0.013
3561	TNCEN	880119	1.02	1.04	440.0	4.18	71.3	36.7	0.015	0.527	-0.004	-0.036	-0.013	2.458	4.147	0.325	0.240	0.064	0.761	0.071
3574	TNCEN	880126	1.00	1.18	450.0	4.85	18.3	7.7	-0.006	0.325	-0.010	-0.017	-0.013	0.450	0.986	0.080	0.207	0.021	0.140	0.025
3627	TNCEN	880202	1.00	1.13	400.0	4.21	66.7	25.2	0.008	0.063	-0.012	0.049	-0.141	0.925	2.883	0.161	0.018	0.018	0.134	0.011
3653	TNCEN	880216	1.01	1.13	475.0	4.41	41.4	19.0	0.014	0.157	-0.006	0.048	-0.006	1.389	2.230	0.262	0.067	0.042	0.290	0.035
3677	TNCEN	880301	0.99	1.19	440.0	4.86	17.1	7.5	0.005	0.133	-0.006	0.024	-0.013	0.579	1.039	0.211	0.076	0.040	0.099	0.019
3704	TNCEN	880308	0.98	1.15	420.0	4.48	36.0	16.4	0.010	0.183	-0.020	0.017	-0.020	1.156	2.024	0.318	0.107	0.030	0.208	0.023
3715	TNCEN	880315	0.96	1.07	220.0	3.79	155.6	72.7	0.028	0.269	-0.026	-0.014	-0.020	6.214	5.514	0.659	0.048	0.027	0.568	0.047
3774	TNCEN	880329	0.98	1.15	425.0	4.25	56.1	24.3	0.012	0.306	-0.006	0.022	-0.010	1.630	2.380	0.249	0.196	0.037	0.110	0.035
3813	TNCEN	880412	0.97	1.10	440.0	4.58	30.6	15.6	0.012	0.074	-0.009	0.053	-0.005	1.266	2.025	0.495	0.023	0.070	0.209	0.027
3860	TNCEN	880503	1.01	1.08	475.0	4.08	84.5	44.4	0.031	0.344	-0.005	0.036	-0.005	3.113	5.300	0.711	0.186	0.087	0.669	0.078
3902	TNCEN	880517	0.95	1.08	475.0	4.55	33.1	14.9	0.005	0.172	-0.037	-0.051	-0.004	1.123	1.601	0.226	0.071	0.083	0.229	0.030
3994	TNCEN	880628	1.08	1.05	65.0	3.07	978.0	386.0	-0.001	0.884	-0.009	-0.007	-0.023	15.722	44.200	3.026	0.114	0.110	1.650	0.143
4004	TNCEN	880705	1.06	1.03	450.0	4.36	50.9	20.0	0.009	0.070	-0.008	0.029	-0.009	1.118	1.853	0.145	0.033	0.015	0.059	0.006
4031	TNCEN	880712	0.98	1.17	540.0	4.73	29.6	8.2	0.009	0.101	-0.005	-0.053	-0.025	0.600	0.852	0.090	0.059	0.017	0.071	0.015
4059	TNCEN	880719	1.09	1.07	450.0	4.26	63.9	24.5	0.021	0.135	-0.003	-0.110	-0.020	1.832	2.158	0.096	0.033	0.017	0.192	0.019
4094	TNCEN	880726	0.99	1.04	475.0	4.42	41.6	21.7	0.021	0.074	-0.003	0.043	-0.039	1.720	2.475	0.406	0.013	0.012	0.440	0.023
4122	TNCEN	880802	1.07	1.01	510.0	4.27	61.2	26.8	-0.019	0.126	-0.005	0.031	-0.025	1.355	2.899	0.243	0.065	0.017	0.182	0.027
4154	TNCEN	880816	1.01	1.13	400.0	4.46	40.8	15.1	0.017	0.054	-0.005	0.038	-0.011	0.982	1.537	0.164	0.023	0.011	0.109	0.010
4212	TNCEN	880823	0.99	1.02	330.0	3.90	129.7	62.2	0.041	0.617	-0.010	-0.055	-0.037	3.015	6.166	0.878	0.318	0.090	0.155	0.013
4186	TNCEN	880830	1.00	1.15	450.0	4.32	52.6	19.5	0.010	0.084	-0.013	0.035	-0.019	1.086	1.992	0.160	0.033	0.015	0.080	0.008
4251	TNCEN	880906	1.06	1.34	500.0	4.69	24.1	7.6	0.005	0.235	-0.005	0.049	-0.019	0.573	0.744	0.045	0.119	0.022	0.033	0.013
4197	TNCEN	880913	1.03	1.37	500.0	4.79	18.7	5.4	0.005	0.036	-0.004	0.044	-0.020	0.407	0.525	-0.004	0.008	0.055	0.030	0.002
4267	TNCEN	880920	0.94	1.13	500.0	4.58	26.9	11.4	0.007	0.085	-0.052	0.050	-0.018	0.812	0.976	0.130	0.044	0.010	0.083	0.007
4271	TNCEN	880927	1.07	1.13	375.0	4.55	31.2	12.5	0.003	0.162	-0.054	0.056	-0.016	0.585	1.414	0.112	0.105	0.021	0.039	0.015
4349	TNCEN	881011	1.06	1.00	400.0	4.19	72.6	34.1	0.015	0.181	-0.004	-0.031	-0.008	2.804	3.114	0.365	0.093	0.047	0.342	0.032
4369	TNCEN	881101	0.94	1.16	525.0	4.64	26.6	10.8	0.006	0.178	-0.011	-0.045	-0.046	0.842	1.117	0.143	0.086	0.069	0.133	0.025
4391	TNCEN	881108	0.99	1.15	450.0	4.35	47.0	20.8	0.017	0.360	-0.023	-0.086	-0.026	1.422	2.249	0.221	0.207	0.075	0.217	0.043
4420	TNCEN	881115	1.01	1.18	450.0	4.51	36.4	12.6	0.010	0.200	-0.017	-0.067	-0.029	0.451	1.436	0.075	0.103	0.015	0.041	0.014

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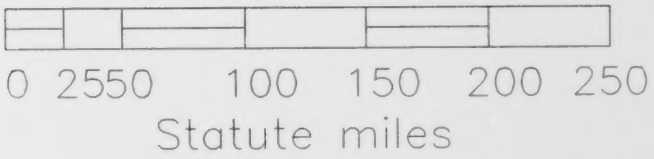
EPA State Operated Rain Network
1988 Sampling and Field Data

GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
4443	TNCEN	881122	1200	881206	1200	881215		2	1.13	2057.0	12.9	4.87	3	
4455	TNCEN	881206	1200	881213	1200	881219	1.00	1	0.15	406.0	30.0	4.30	3	
4518	TNCEN	881220	1200	881227	1200	890119		4	3.31	6174.0	11.5	4.72		
4519	TNCEN	881227	1200	890103	1200	890119		5	1.54	2894.0	15.4	4.58		

EPA State Operated Rain Network
1988 Laboratory Data

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4443	TNCEN	881122	0.96	1.23	525.0	4.78	18.8	9.2	0.009	0.419	-0.017	-0.025	-0.024	0.612	1.228	0.118	0.248	0.035	0.241	0.036
4455	TNCEN	881206	0.99	1.13	330.0	4.22	61.6	24.9	0.010	0.057	-0.011	0.023	-0.034	2.623	1.691	0.224	0.021	0.023	0.132	0.010
4518	TNCEN	881220	0.98	1.21	460.0	4.69	25.2	9.1	0.005	0.202	-0.020	-0.048	-0.041	0.543	1.077	0.155	0.118	0.035	0.033	0.018
4519	TNCEN	881227	1.03	1.23	475.0	4.59	29.1	11.1	0.008	0.203	-0.020	-0.049	-0.042	0.713	1.383	0.158	0.117	0.023	0.077	0.017

West Virginia



□ Major city (for reference)

* EPA Acid Rain Site

WEST VIRGINIA

SITE	SITE NAME	NEAREST CITY	COUNTY	SAMPLING PERIOD[1] BEGIN	END	#SAMPLES	%NON-VOID[2]
WVAPC	Charleston APC	Charleston	Kanawha			24	95.8
WVGRN	Greenbrier	Lewisburg	Greenbrier			15	100.0
WVNEW	New Manchester	New Comberland	Hancock			22	100.0
WVWAR	Warwood Ave.	Wheeling	Ohio			---	---

(1) "BEGIN" was JAN 88 and "END" was DEC 88 unless otherwise noted. For sites which were not operational during 1988, the date range of operation is given.

(2) Percentage of samples received which were not voided by GGC due to contamination.

Figure 2-1 (continued)
Site: WVAPC
Data Plots, Jan 1988 - Dec 1988

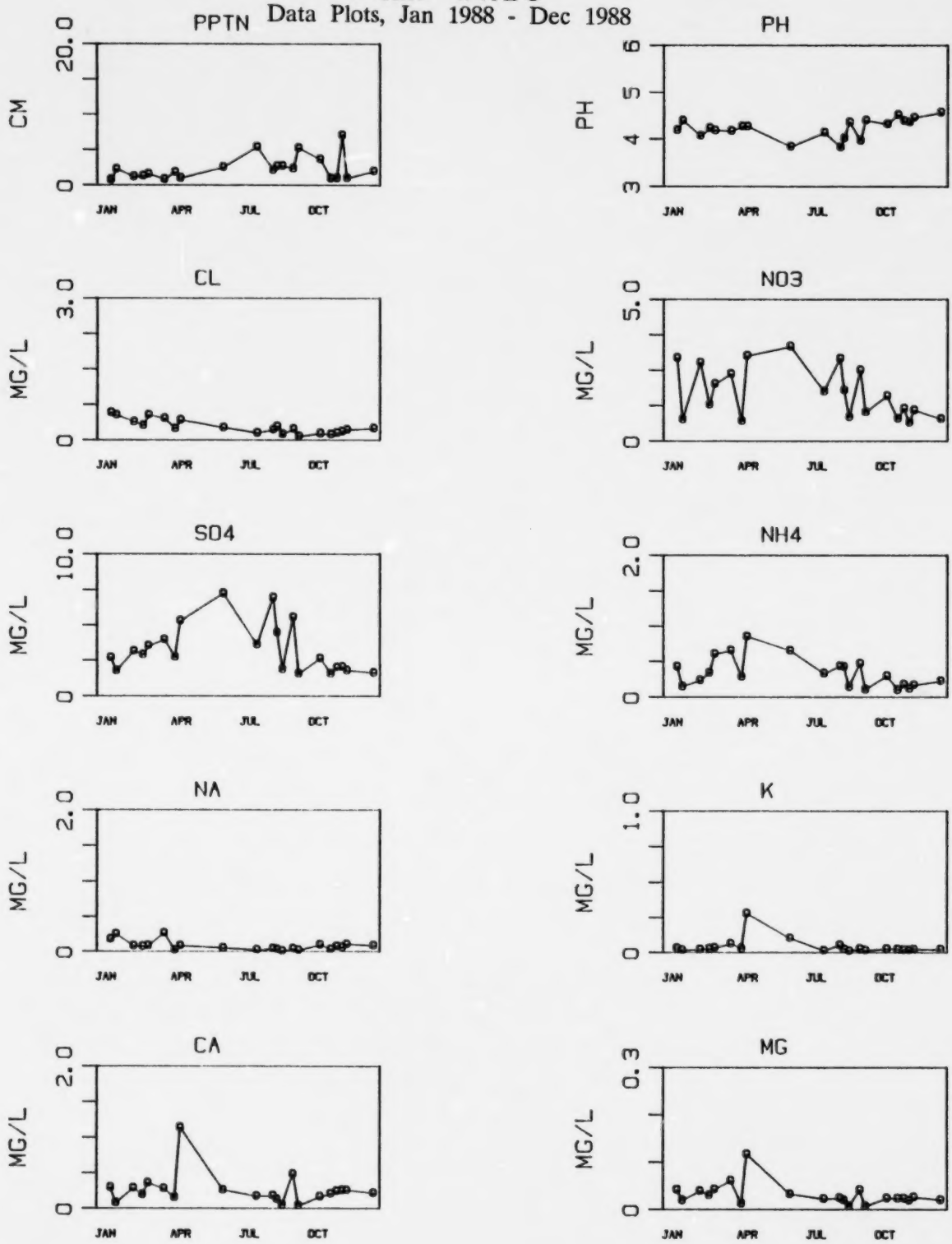


Figure 2-1 (continued)
Site: WVGRN
Data Plots, Jan 1988 - Dec 1988

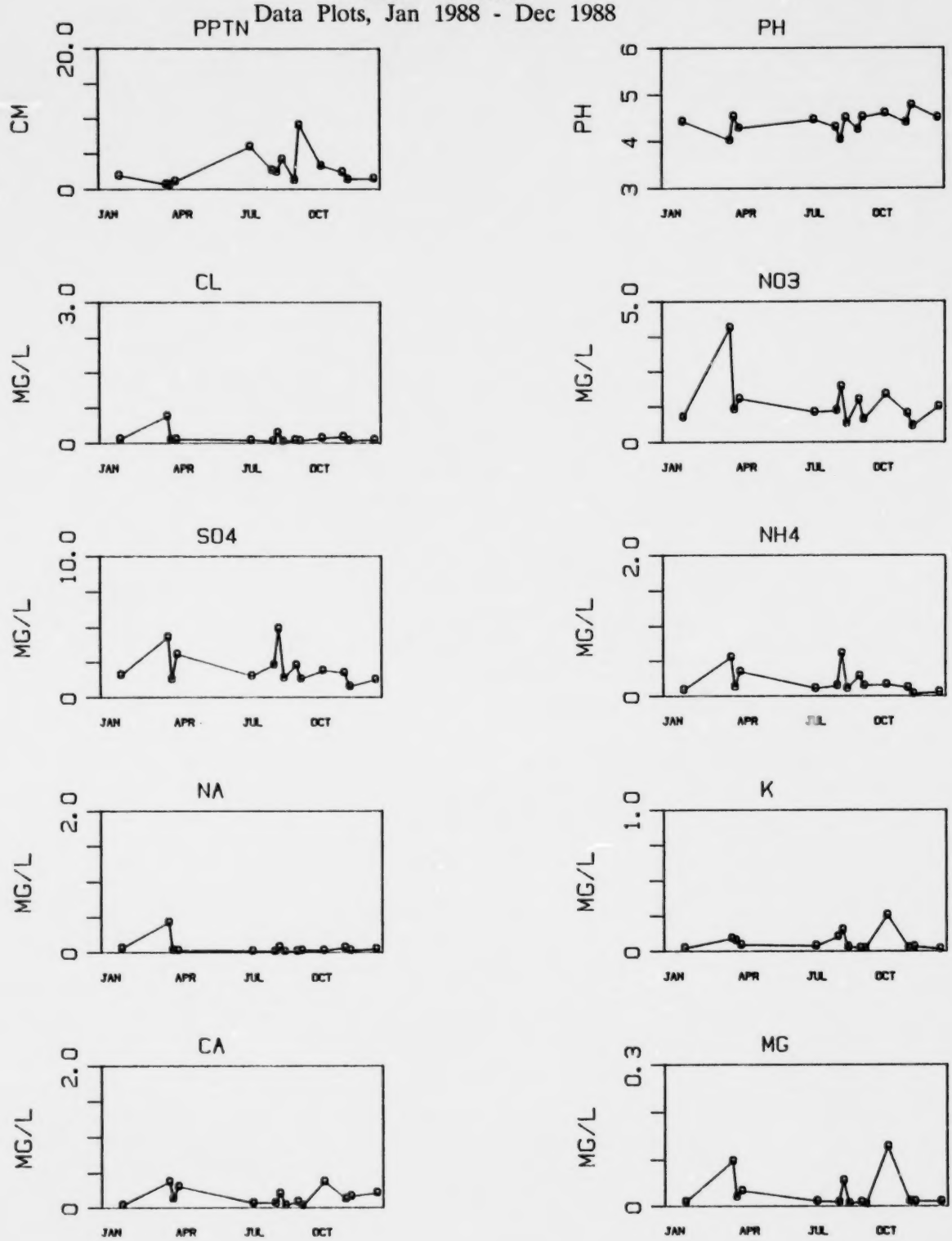
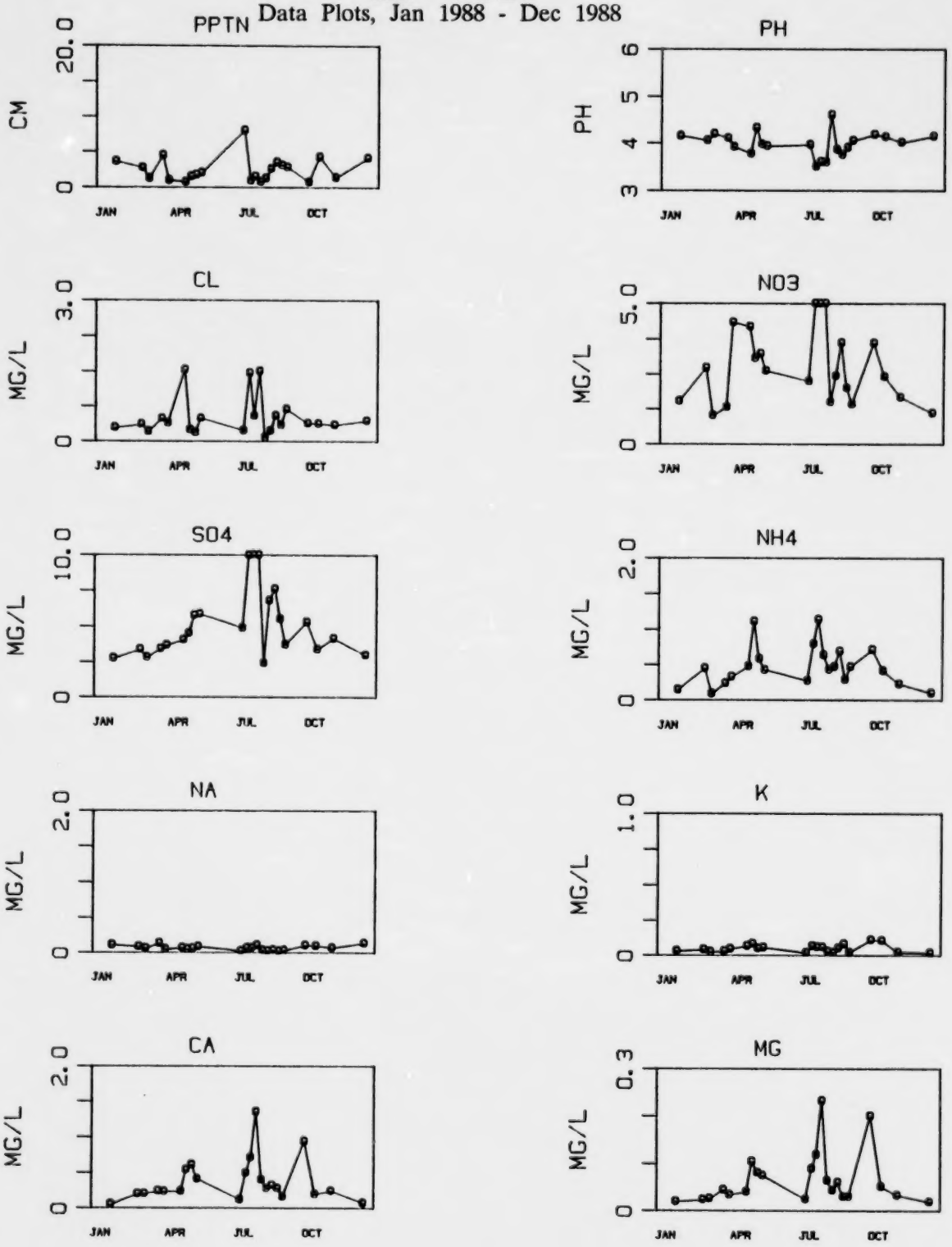


Figure 2-1 (continued)
Site: WVNEW
Data Plots, Jan 1988 - Dec 1988



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EPA State Operated Rain Network
1988 Sampling and Field Data

GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
3562	WVAPC	880119		880126		880203	2.00			523.9	35.3	4.35	3	
3566	WVAPC	880126		880203		880208	2.00	3		1516.3	19.2	4.56	3	
3628	WVAPC	880209	900	880218	900	880223		2		648.4	55.4	4.09	3	99
3654	WVAPC	880218	900	880223	900	880302	2.00	2		788.3	40.1	4.11	3	
3678	WVAPC	880301	900	880308	900	880315	2.00	2		867.9	28.9	4.41	3	
3707	WVAPC	880308	900	880315	900	880325	2.00	4		1057.9	34.0	4.23	3	
3768	WVAPC	880329	900	880405	900	880415		3		548.7	34.8	4.22	3	33
3814	WVAPC	880412	900	880419	900	880428		3		1221.7	24.1	4.24	3	33
3836	WVAPC	880419	900	880426	900	880510		4		668.2	40.7	4.13	3	33
3861	WVAPC	880503	900	880511	900	880517		4		2044.5	46.5	3.82	3	3334
3904	WVAPC	880517	900	880524	900	880602		6		1296.5	80.8	3.81	3	3334
3968	WVAPC	880614	900	880621	900	880701		2		1695.4	73.0	3.75	3	33
4089	WVAPC	880728	900	880803	900	880809		3		3640.2	35.6	4.06	3	
4159	WVAPC	880818	900	880823	900	880901		2		1431.2	68.6	3.79	3	33
4214	WVAPC	880823	900	880830	900	880907		4		1795.2	44.9	4.03	3	
4183	WVAPC	880830	900	880906	900	880915		4		1805.1	18.8	4.45		
4252	WVAPC	880913	900	880920	900	880927		3		1575.8	47.3	3.99		
4287	WVAPC	880920	900	880927	900	881011		3		3530.5	21.1	4.39		
4335	WVAPC	881018	900	881025	900	881109		3		2443.4	24.3	4.52	3	
4387	WVAPC	881101	900	881109	900	881117		4		638.2	13.1	4.52	3	33
4386	WVAPC	881109	900	881116	900	881117		5		673.4	19.0	4.43	3	
4408	WVAPC	881116	900	881122	900	881202		4		4774.5	19.9	4.38	3	
4432	WVAPC	881122	900	881129	900	881209		3		668.7	17.5	4.54	3	33
4517	WVAPC	881227	900	890103	900	890119	2.00	4		1317.1	15.0	4.88		22
3567	WVGRN	880128		880204		880208	2.00			1316.8	18.7	4.60		
3769	WVGRN	880330	900	880404	900	880415				473.8	48.1	4.04	3	33
3790	WVGRN	880404	900	880411	900	880422		2		448.8	13.5	4.68	3	33
3815	WVGRN	880411	900	880420	900	880428		4		747.9	27.5	4.34		33
3862	WVGRN	880502	900	880509	900	880517		3		3216.4	32.6	4.00	3	3334

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EPA State Operated Rain Network
1988 Laboratory Data

GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
3562	WVAPC	880119	1.05	1.02	300.0	4.18	71.9	34.4	0.028	0.580	-0.004	-0.039	-0.013	2.918	2.669	0.423	0.175	0.029	0.290	0.041
3566	WVAPC	880126	1.00	1.14	425.0	4.38	44.7	18.3	0.011	0.526	-0.012	-0.017	0.168	0.748	1.745	0.144	0.249	0.015	0.077	0.019
3628	WVAPC	880209	9999	9999	250.0	4.04														
3654	WVAPC	880218	1.03	1.07	300.0	4.06	87.8	38.8	0.029	0.383	-0.006	0.048	-0.006	2.757	3.130	0.232	0.080	0.021	0.281	0.038
3678	WVAPC	880301	0.99	1.10	330.0	4.22	61.5	27.4	0.025	0.307	0.022	0.031	0.107	1.269	2.893	0.336	0.074	0.027	0.192	0.029
3707	WVAPC	880308	0.98	1.11	475.0	4.17	70.3	33.1	0.057	0.531	-0.022	-0.015	-0.020	2.003	3.519	0.600	0.084	0.033	0.356	0.042
3768	WVAPC	880329	1.00	1.10	150.0	4.16	69.7	35.1	0.034	0.457	-0.007	0.028	-0.011	2.359	3.953	0.650	0.264	0.061	0.275	0.060
3814	WVAPC	880412	1.00	1.16	375.0	4.26	56.5	23.0	0.023	0.242	-0.009	0.044	0.184	0.702	2.716	0.280	0.014	0.029	0.150	0.013
3836	WVAPC	880419	0.97	1.10	130.0	4.26	54.5	36.6	0.036	0.419	-0.007	0.051	-0.008	2.999	5.294	0.849	0.082	0.278	1.134	0.117
3861	WVAPC	880503	1.00	1.09	375.0	3.98	103.9	46.8	0.036	0.393	-0.005	0.038	-0.005	3.202	4.197	0.577	0.037	0.051	0.244	0.035
3904	WVAPC	880517	1.05	1.01	350.0	3.80	168.4	80.7	0.071	0.741	-0.042	-0.052	-0.003	4.836	7.941	1.035	0.117	0.118	0.526	0.076
3968	WVAPC	880614	1.06	0.98	470.0	3.83	165.0	72.5	0.045	0.262	-0.008	-0.027	-0.001	3.329	7.228	0.648	0.048	0.101	0.255	0.032
4089	WVAPC	880728	1.05	1.02	440.0	4.13	79.3	35.4	0.016	0.151	-0.003	0.021	-0.046	1.744	3.591	0.327	0.020	0.013	0.168	0.022
4159	WVAPC	880818	1.07	1.00	300.0	3.82	165.0	70.4	0.036	0.219	-0.004	0.017	-0.012	2.902	6.936	0.427	0.040	0.052	0.177	0.024
4214	WVAPC	880823	1.01	1.03	350.0	4.01	103.7	44.9	0.035	0.283	-0.010	-0.057	-0.038	1.783	4.452	0.422	0.030	0.024	0.129	0.019
4183	WVAPC	880830	1.01	1.12	475.0	4.35	48.9	18.4	0.015	0.121	-0.009	-0.033	-0.024	0.836	1.848	0.141	0.005	0.010	0.051	0.006
4252	WVAPC	880913	1.01	1.09	300.0	3.96	113.0	49.9	0.036	0.230	-0.005	0.047	-0.019	2.494	5.535	0.466	0.038	0.025	0.479	0.041
4287	WVAPC	880920	1.05	1.11	525.0	4.39	43.7	16.8	0.008	0.076	-0.061	0.043	-0.008	1.013	1.549	0.104	0.018	0.014	0.038	0.007
4335	WVAPC	881018	1.07	1.01	400.0	4.31	57.2	25.1	0.019	0.135	-0.039	-0.033	-0.004	1.579	2.622	0.291	0.096	0.025	0.162	0.023
4387	WVAPC	881101	0.98	1.20	350.0	4.51	32.9	13.0	0.019	0.120	-0.019	-0.075	-0.029	0.786	1.540	0.099	0.032	0.022	0.204	0.023
4386	WVAPC	881109	0.95	1.17	200.0	4.38	43.8	18.1	0.017	0.151	-0.018	-0.073	-0.030	1.138	1.992	0.172	0.073	0.018	0.242	0.023
4408	WVAPC	881116	0.89	1.17	475.0	4.35	48.9	18.3	0.018	0.183	-0.013	-0.073	0.154	0.647	2.031	0.118	0.062	0.016	0.251	0.019
4432	WVAPC	881122	0.96	1.15	250.0	4.45	37.7	16.3	0.018	0.216	-0.031	-0.030	-0.023	1.081	1.772	0.164	0.102	0.020	0.253	0.025
4517	WVAPC	881227	0.97	1.20	270.0	4.56	30.3	12.9	0.020	0.246	-0.020	-0.047	-0.040	0.773	1.613	0.221	0.086	0.021	0.210	0.020
3567	WVGRN	880128	1.03	1.15	540.0	4.42	41.1	15.4	-0.005	0.090	-0.012	-0.017	-0.015	0.879	1.585	0.086	0.060	0.022	0.038	0.010
3769	WVGRN	880330	1.01	1.08	200.0	4.02	96.0	47.5	0.029	0.575	-0.007	0.034	-0.010	4.067	4.308	0.551	0.428	0.089	0.375	0.097
3790	WVGRN	880404	1.02	1.11	150.0	4.53	30.5	13.6	0.014	0.071	-0.016	0.042	-0.005	1.148	1.284	0.130	0.033	0.076	0.136	0.020
3815	WVGRN	880411	1.01	1.08		4.28	55.6	25.8	0.013	0.081	-0.009	0.041	-0.005	1.520	3.074	0.348	0.026	0.044	0.307	0.033
3862	WVGRN	880502	0.98	1.15	350.0	4.12	76.6	31.7	0.009	0.119	-0.005	0.041	-0.005	2.023	3.240	0.265	0.056	0.059	0.224	0.025

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GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
4051	WVGRN	880718	900	880725	900	880801		5		4084.0	16.3	4.28	3	
4160	WVGRN	880816	900	880822	900	880901		2		1805.1	23.5	4.30		33
4213	WVGRN	880822	900	880829	900	880907		5		1665.5	44.1	4.05	3	33
4184	WVGRN	880829	900	880908	900	880915		4		2852.3	13.9	4.58	3	
4253	WVGRN	880914	900	880920	900	880927		2		877.9	25.2	4.29	3	
4288	WVGRN	880920	900	880926	900	881011				6163.4	14.4	4.44	3	
4336	WVGRN	881019	900	881025	900	881109		2		2204.1	19.2	4.53	3	
4409	WVGRN	881116	900	881123	900	881202				1591.5	18.1	4.43	3	
4431	WVGRN	881123	900	881130	900	881209		3		933.3	7.9	4.86	3	33
4524	WVGRN	881227	900	890103	900	890119	2.00	4		1007.8	14.1	4.66		22
3607	WVNEW	880126	1200	880202	1200	880217	2.00	5		2443.4	34.3	4.10	3	
3716	WVNEW	880301	1200	880310	1200	880328		3		1817.1	42.1	3.95	3	
3708	WVNEW	880310	1200	880316	1200	880325		4		847.7	29.9	4.15		
3770	WVNEW	880328	1200	880405	1200	880416				3021.9	35.5	4.05	3	
3796	WVNEW	880405	1200	880412	1200	880425		5		658.2	55.5	3.82	3	
3847	WVNEW	880427		880504		880513		2		490.7	69.8	3.72	3	
3866	WVNEW	880504		880511		880520		6		1012.3	33.9	4.20	3	
3871	WVNEW	880511		880518		880523		4		1159.9	51.2	3.88	3	
3903	WVNEW	880518		880525		880601		4		1382.3	56.7	3.70	3	
4043	WVNEW	880713	1200	880721	1200	880729		3		5425.4	39.1	3.50	3	
4076	WVNEW	880721	1200	880727	1200	880808		3		637.3	150.7	3.20	3	
4129	WVNEW	880727		880803		880824		1		1029.2	121.7	3.49	3	
4130	WVNEW	880803		880810		880824				526.6	120.6	3.50	3	
4136	WVNEW	880810		880817		880826				867.7	17.1	4.39	3	
4155	WVNEW	880817		880824		880830		3		1747.3	63.6	3.70		
4187	WVNEW	880824		880831		880915		2		2378.6	72.8	3.60		
4237	WVNEW	880831		880907		880922		3		2084.4	55.7	3.70		
4238	WVNEW	880907		880914		880922		3		1894.9	42.1	3.85		
4311	WVNEW	881005	1200	881012	1200	881019		3		508.6	43.0	3.85	3	

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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4051	WVGRN	880718	1.09	1.08	540.0	4.46	43.0	15.4	0.011	0.059	-0.004	-0.087	-0.022	1.047	1.509	0.109	0.017	0.037	0.066	0.011
4160	WVGRN	880816	1.06	1.06	250.0	4.30	57.2	22.3	0.014	0.041	-0.004	0.037	-0.012	1.104	2.308	0.145	0.012	0.102	0.067	0.009
4213	WVGRN	880822	0.97	1.04	300.0	4.04	95.4	44.6	0.035	0.218	-0.010	-0.055	-0.038	1.948	4.931	0.609	0.073	0.151	0.206	0.055
4184	WVGRN	880829	1.01	1.16	550.0	4.50	35.6	12.8	0.009	0.035	-0.011	0.037	-0.021	0.644	1.372	0.108	0.011	0.031	0.037	0.006
4253	WVGRN	880914	0.97	1.11	250.0	4.25	57.3	24.1	0.009	0.065	-0.005	0.041	-0.019	1.485	2.277	0.284	0.015	0.021	0.083	0.009
4288	WVGRN	880920	1.03	1.14	450.0	4.52	34.5	12.7	0.007	0.046	-0.061	0.045	-0.008	0.795	1.299	0.148	0.027	0.019	0.028	0.005
4336	WVGRN	881019	0.99	1.02	300.0	4.60	31.2	16.5	0.017	0.106	-0.037	-0.033	-0.004	1.669	1.889	0.160	0.027	0.255	0.376	0.128
4409	WVGRN	881116	0.99	1.15	350.0	4.40	42.4	16.7	0.014	0.134	-0.013	-0.074	-0.037	0.997	1.724	0.117	0.065	0.023	0.129	0.011
4431	WVGRN	881123	0.91	1.24	300.0	4.77	20.6	7.0	0.011	0.050	-0.030	-0.033	-0.023	0.558	0.775	0.029	0.029	0.030	0.166	0.010
4524	WVGRN	881227	1.00	1.22	280.0	4.50	36.4	12.8	0.011	0.068	-0.020	-0.057	-0.048	1.236	1.247	0.054	0.046	0.015	0.213	0.010
3607	WVNEW	880126	1.05	1.07	200.0	4.15	73.3	30.4	0.021	0.286	-0.019	0.036	-0.145	1.531	2.746	0.145	0.110	0.030	0.051	0.019
3716	WVNEW	880301	0.98	1.09	450.0	4.05	88.5	39.6	0.050	0.355	-0.027	-0.013	-0.020	2.722	3.367	0.447	0.085	0.041	0.200	0.023
3708	WVNEW	880310	0.99	1.12	450.0	4.19	66.4	26.7	0.026	0.211	-0.022	-0.015	0.084	1.016	2.806	0.089	0.059	0.025	0.201	0.025
3770	WVNEW	880328	0.96	1.16	450.0	4.10	81.4	32.8	0.043	0.481	-0.007	0.029	-0.010	1.313	3.419	0.235	0.132	0.029	0.241	0.044
3796	WVNEW	880405	1.03	1.07	450.0	3.91	125.5	53.4	0.061	0.387	-0.014	0.051	-0.005	4.330	3.665	0.327	0.049	0.046	0.234	0.034
3847	WVNEW	880427	0.97	1.10	250.0	3.77	160.3	70.1	0.242	1.535	-0.005	0.021	-0.012	4.180	4.053	0.474	0.068	0.066	0.236	0.040
3866	WVNEW	880504	1.03	1.08	220.0	4.32	50.4	32.4	0.042	0.242	-0.005	0.042	-0.005	3.061	4.500	1.108	0.051	0.084	0.540	0.104
3871	WVNEW	880511	1.00	1.07	550.0	3.97	106.3	52.0	0.030	0.191	-0.006	0.033	-0.005	3.232	5.753	0.583	0.059	0.050	0.610	0.081
3903	WVNEW	880518	1.05	1.06	350.0	3.93	120.0	54.9	0.058	0.484	-0.040	-0.051	-0.004	2.614	5.843	0.427	0.086	0.056	0.409	0.075
4043	WVNEW	880713	1.09	0.97	320.0	3.96	127.3	52.2	0.025	0.228	-0.005	-0.071	-0.024	2.247	4.882	0.273	0.024	0.018	0.121	0.025
4076	WVNEW	880721	1.11	0.97	165.0	3.50	352.6	152.8	0.142	1.467	-0.009	-0.025	-0.044	7.364	12.941	0.790	0.070	0.066	0.493	0.089
4129	WVNEW	880727	1.08	0.97	380.0	3.60	273.8	128.3	0.061	0.539	-0.006	-0.017	-0.029	5.647	13.505	1.134	0.067	0.059	0.711	0.119
4130	WVNEW	880803	1.06	0.97	175.0	3.59	273.8	132.1	0.185	1.502	-0.006	-0.017	-0.030	5.033	13.041	0.635	0.108	0.057	1.351	0.232
4136	WVNEW	880810	1.04	1.09	400.0	4.60	28.6	16.5	0.021	0.085	-0.003	0.035	-0.035	1.492	2.412	0.430	0.033	0.029	0.397	0.064
4155	WVNEW	880817	1.04	0.99	450.0	3.86	150.0	65.7	0.040	0.219	-0.005	0.018	-0.012	2.434	6.800	0.469	0.024	0.020	0.276	0.043
4187	WVNEW	880824	0.99	1.02	375.0	3.75	181.0	82.1	0.071	0.547	-0.013	-0.025	-0.018	3.609	7.610	0.690	0.036	0.052	0.320	0.060
4237	WVNEW	880831	1.00	1.06	350.0	3.90	127.0	55.1	0.042	0.342	-0.010	0.047	-0.021	2.001	5.506	0.288	0.021	0.081	0.279	0.030
4238	WVNEW	880907	0.98	1.09	475.0	4.05	94.6	39.3	0.065	0.685	-0.010	0.038	-0.021	1.414	3.726	0.469	0.034	0.020	0.161	0.030
4311	WVNEW	881005	1.04	0.98	250.0	4.18	73.7	44.4	0.050	0.380	-0.081	0.026	-0.011	3.607	5.287	0.711	0.104	0.110	0.940	0.200

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GGC ID	Site Code	--- Begin --- Day	Time	----- End ---- Day	Time	Date Rec'd	Type	# Rain Events	Precip inches	--------- Field ------- Wt gm	Cond µmho/cm	pH	Comment Codes 1	2
4337	WVNEW	881019	1200	881026	1200	881109		5		2882.2	38.6	3.80	3	
4430	WVNEW	881109		881116		881209		2		940.5	45.2	4.18	3	
4521	WVNEW	881221		881229		890119	2.00	2		2777.5	31.6	4.20		22

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GGC ID	Site Code	Begin Day	Anion/ Cation	TC/ MC	Wt gm	pH	Gran Acid µequiv/l	Cond µmho/cm	F	Cl	NO2	PO4	Br	NO3	SO4	NH4	Na	K	Ca	Mg
									mg/l											
4337	WVNEW	881019	1.05	0.99	250.0	4.13	83.9	38.1	0.063	0.374	-0.035	-0.033	-0.004	2.408	3.402	0.414	0.097	0.104	0.196	0.052
4430	WVNEW	881109	0.99	1.11	300.0	4.01	95.0	40.7	0.054	0.345	-0.029	-0.035	-0.024	1.666	4.149	0.224	0.070	0.022	0.243	0.033
4521	WVNEW	881221	1.06	1.14	425.0	4.14	74.7	29.3	0.035	0.439	-0.020	-0.053	-0.045	1.100	2.995	0.100	0.137	0.017	0.073	0.019

3.0 SUMMARY OF ANALYTICAL DATA BY SITE

Table 3-1 compares the occurrence of different concentration levels at each site for the time period JAN 88 through DEC 88. The concentration at which 100%, 75%, 50%, 25%, and 0% of the samples have concentrations greater than the given value are listed for each site and for each analyte.

Table 3-2 gives the precipitation weighted mean data for the time period JAN 88 through DEC 88. pH data were converted to hydrogen ion concentration, weighted and then converted back to pH.

For Tables 3-1 and 3-2, samples which have the following values under the "CODE2" mnemonic are excluded: "99" - this is a sample voided by GGC because of visually obvious contamination; "31" - a sample which the field operator indicated as having bird droppings; "32" - a sample which the field operator indicated as being cloudy or colored; "34" - a sample which the field operator indicated as having insects; "90" - a dry side bucket.

Note that data are included in Tables 3-1 and 3-2 even if the operator indicated a sampler malfunction or if the operator indicated that there was dirt or dust in the sample.

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TABLE 3-1

CUMULATIVE FREQUENCY OF OCCURRENCE: PPTN, CM

		% OF SAMPLES GREATER THAN GIVEN VALUE				
SITE	#PTS	100%	75%	50%	25%	0%
ALMOB	36	0.13	1.52	3.48	5.84	15.88
ALTAL	28	0.18	1.09	2.03	4.14	10.03
DEGEO	44	0.04	0.51	0.76	2.79	6.86
DELUM	36	0.25	1.02	2.03	3.30	11.68
GABFG	23	0.13	0.40	1.24	2.92	5.21
GADAW	34	0.13	0.64	1.65	3.49	11.94
GADUF	17	0.25	1.00	1.56	2.83	5.72
GAHIW	21	0.12	1.24	3.19	9.38	14.10
GASUM	36	0.10	1.27	2.01	4.55	8.48
GAWAY	28	0.25	0.76	1.83	3.20	15.09
KYGRA	38	0.00	0.16	0.89	2.35	11.20
KYMAM	36	0.03	1.15	2.29	4.34	11.96
LACAR	24	0.00	0.76	1.68	3.02	12.01
LACHS	38	0.18	1.22	2.21	2.76	8.03
LAHOM	10	0.69	0.88	1.70	3.20	5.11
LAROS	42	0.08	0.81	1.80	4.31	9.80
MD3EC	39	0.13	0.76	1.27	3.05	7.54
MDRGP	37	0.18	0.45	1.00	2.55	5.36
MSUNI	35	0.06	0.75	2.18	3.38	9.91
SCCAP	31	0.16	0.74	1.35	2.52	11.13
SCCON	37	0.03	0.39	1.46	2.40	7.16
SCDEL	34	0.05	0.65	1.50	2.25	6.78
SCLON	36	0.03	0.58	1.98	4.11	8.23
SDAPR	3	0.05	0.04	0.08	0.11	0.15
SDBPR	3	0.05	0.04	0.08	0.11	0.15
SDCUS	17	0.05	0.08	0.97	1.93	5.84
TNCEN	30	0.33	1.14	2.64	3.73	9.78
WVAPC	21	0.77	0.99	1.87	2.61	7.03
WVGRN	14	0.66	1.20	1.94	2.95	9.08
WVNEW	22	0.72	1.11	1.71	3.29	7.99

TABLE 3-1 (CONTINUED)

CUMULATIVE FREQUENCY OF OCCURRENCE: PH

SITE	#PTS	% OF SAMPLES GREATER THAN GIVEN VALUE				
		100%	75%	50%	25%	0%
ALMOB	36	3.97	4.29	4.55	4.76	4.93
ALTAL	28	4.00	4.24	4.56	4.82	5.17
DEGEO	44	3.25	4.11	4.40	4.63	5.66
DELUM	36	3.73	4.04	4.17	4.46	5.25
GABFG	23	3.61	4.23	4.46	4.62	4.98
GADAW	34	3.43	4.21	4.37	4.60	5.36
GADUF	17	4.01	4.41	4.62	4.73	5.58
GAHIW	21	3.84	4.12	4.39	4.58	4.81
GASUM	36	3.63	4.12	4.27	4.50	5.04
GAWAY	28	3.70	4.44	4.70	4.87	5.54
KYGRA	38	3.29	4.00	4.22	4.46	5.79
KYMAM	36	3.65	4.24	4.41	4.52	4.81
LACAR	24	4.33	4.72	5.12	5.56	5.99
LACHS	38	3.78	4.38	4.61	4.90	5.21
LAHOM	10	4.16	4.29	4.44	4.81	5.02
LAROS	42	4.01	4.47	4.72	4.91	5.31
MD3EC	39	3.54	4.02	4.22	4.47	6.23
MDRGP	37	3.27	3.99	4.29	4.45	6.48
MSUNI	35	3.56	4.43	4.61	4.76	5.33
SCCAP	31	3.61	4.31	4.49	4.66	5.84
SCCON	37	3.62	4.13	4.40	4.62	5.10
SCDEL	34	3.41	4.19	4.31	4.47	5.16
SCLON	36	3.84	4.11	4.37	4.55	4.79
SDAPR	3	4.98	3.74	5.69	6.39	6.39
SDBPR	3	4.96	3.72	5.64	6.33	6.35
SDCUS	17	4.98	5.16	5.67	5.98	6.79
TNCEN	30	3.79	4.27	4.46	4.62	4.86
WVAPC	21	3.82	4.08	4.24	4.37	4.56
WVGRN	14	4.02	4.27	4.42	4.51	4.77
WVNEW	22	3.50	3.82	3.97	4.14	4.60

TABLE 3-1 (CONTINUED)

CUMULATIVE FREQUENCY OF OCCURRENCE: COND, UMHO/CM

SITE	#PTS	% OF SAMPLES GREATER THAN GIVEN VALUE				
		100%	75%	50%	25%	0%
ALMOB	36	5.5	10.0	17.8	25.9	68.7
ALTAL	28	3.9	7.6	15.6	26.0	47.5
DEGEO	44	4.3	12.9	24.1	39.7	267.0
DELUM	36	8.2	14.4	29.5	41.4	90.8
GABFG	23	4.8	10.7	17.9	33.3	117.8
GADAW	34	6.0	13.7	22.2	32.4	156.5
GADUF	17	3.0	7.7	10.2	16.5	49.5
GAHIW	21	5.8	10.4	18.7	34.3	75.7
GASUM	36	6.0	12.9	22.7	35.2	118.1
GAWAY	28	2.7	7.1	12.5	19.0	96.9
KYGRA	38	4.8	14.7	27.7	47.6	248.6
KYMAM	36	6.2	13.1	18.8	26.7	102.1
LACAR	24	0.2	7.5	9.8	14.7	24.4
LACHS	38	4.5	7.6	11.5	20.8	85.6
LAHOM	10	3.9	6.8	15.3	24.1	35.3
LAROS	42	2.7	7.3	12.2	18.7	47.0
MD3EC	39	3.2	16.2	27.0	43.7	142.8
MDRGP	37	7.3	14.9	23.3	42.8	183.6
MSUNI	35	3.4	10.1	12.8	21.3	143.7
SCCAP	31	8.3	13.8	19.5	27.4	121.3
SCCON	37	3.8	10.1	19.2	38.3	121.3
SCDEL	34	3.5	15.4	23.3	30.8	173.5
SCLON	36	6.3	13.4	20.6	33.7	94.3
SDAPR	3	6.9	5.2	6.9	7.1	7.8
SDBPR	3	7.2	5.4	7.2	7.3	7.4
SDCUS	17	3.7	5.1	7.1	8.6	60.0
TNCEN	30	5.4	10.0	15.6	23.1	72.7
WVAPC	21	12.9	18.1	26.2	36.3	72.5
WVGRN	14	7.0	12.8	15.4	23.2	47.5
WVNEW	22	16.5	32.6	44.4	60.4	152.8

TABLE 3-1 (CONTINUED)

CUMULATIVE FREQUENCY OF OCCURRENCE: F,MG/L

		% OF SAMPLES GREATER THAN GIVEN VALUE				
SITE	#PTS	100%	75%	50%	25%	0%
ALMOB	36	-0.020	-0.002	0.008	0.015	0.041
ALTAL	28	-0.016	0.011	0.014	0.021	0.069
DEGEO	44	-0.009	0.009	0.015	0.023	0.165
DELUM	36	0.007	0.011	0.015	0.027	0.076
GABFG	23	-0.016	0.006	0.015	0.034	0.077
GADAW	34	-0.003	0.010	0.017	0.024	0.108
GADUF	17	-0.003	0.003	0.009	0.011	0.049
GAHIW	21	-0.016	0.009	0.015	0.021	0.088
GASUM	36	-0.016	0.009	0.015	0.028	0.072
GAWAY	28	-0.009	0.009	0.012	0.014	0.048
KYGRA	38	-0.030	0.009	0.015	0.022	0.094
KYMAM	36	-0.030	0.007	0.011	0.015	0.029
LACAR	24	0.001	0.010	0.017	0.025	0.065
LACHS	38	-0.013	0.007	0.011	0.016	0.038
LAHOM	10	-0.014	-0.007	0.014	0.021	0.029
LAROS	42	-0.015	0.005	0.011	0.019	0.044
MD3EC	39	-0.012	0.008	0.017	0.026	0.052
MDRGP	37	-0.016	0.009	0.017	0.029	0.089
MSUNI	35	-0.007	0.008	0.013	0.020	0.066
SCCAP	31	-0.018	0.009	0.014	0.022	0.059
SCCON	37	-0.024	0.008	0.014	0.023	0.084
SCDEL	34	-0.024	0.008	0.016	0.028	0.091
SCLON	36	-0.003	0.011	0.016	0.028	0.127
SDAPR	3	0.008	0.006	0.012	0.016	0.019
SDBPR	3	0.012	0.009	0.013	0.015	0.016
SDCUS	17	-0.008	0.007	0.011	0.017	0.057
TNCEN	30	-0.019	0.005	0.010	0.015	0.041
WVAPC	21	0.008	0.017	0.022	0.035	0.057
WVGRN	14	-0.005	0.009	0.011	0.014	0.035
WVNEW	22	0.021	0.033	0.050	0.062	0.242

TABLE 3-1 (CONTINUED)

CUMULATIVE FREQUENCY OF OCCURRENCE: CL,MG/L

		% OF SAMPLES GREATER THAN GIVEN VALUE				
SITE	#PTS	100%	75%	50%	25%	0%
ALMOB	36	0.055	0.315	0.618	1.175	4.522
ALTAL	28	0.030	0.160	0.298	0.532	1.694
DEGEO	44	0.078	0.213	0.437	0.910	3.441
DELUM	36	0.103	0.163	0.283	0.537	1.779
GABFG	23	0.088	0.181	0.313	0.600	1.760
GADAW	34	0.051	0.102	0.177	0.508	4.573
GADUF	17	0.060	0.092	0.146	0.285	0.593
GAHIW	21	0.047	0.093	0.182	0.389	1.117
GASUM	36	0.042	0.126	0.282	0.438	1.751
GAWAY	28	0.054	0.113	0.422	0.756	5.863
KYGRA	38	-0.031	0.059	0.114	0.285	0.852
KYMAM	36	0.042	0.086	0.115	0.155	0.749
LACAR	24	0.040	0.228	0.344	0.525	3.346
LACHS	38	0.049	0.121	0.192	0.586	5.350
LAHOM	10	0.112	0.141	0.220	0.453	2.054
LAROS	42	0.017	0.127	0.299	0.623	4.704
MD3EC	39	0.037	0.331	0.584	0.787	7.361
MDRGP	37	0.032	0.067	0.137	0.190	0.732
MSUNI	35	-0.318	0.110	0.185	0.337	2.374
SCCAP	31	0.168	0.522	1.127	1.745	6.482
SCCON	37	0.071	0.158	0.307	0.646	9.442
SCDEL	34	0.035	0.145	0.216	0.556	2.166
SCLON	36	0.042	0.117	0.251	0.426	4.341
SDAPR	3	0.060	0.045	0.072	0.092	0.116
SDBPR	3	0.051	0.039	0.064	0.085	0.109
SDCUS	17	-0.019	0.040	0.069	0.090	2.124
TNCEN	30	0.036	0.084	0.161	0.219	0.617
WVAPC	21	0.076	0.151	0.236	0.364	0.580
WVGRN	14	0.035	0.048	0.068	0.098	0.574
WVNEW	22	0.085	0.235	0.374	0.512	1.535

TABLE 3-1 (CONTINUED)

CUMULATIVE FREQUENCY OF OCCURRENCE: NO2,MG/L

		% OF SAMPLES GREATER THAN GIVEN VALUE				
SITE	#PTS	100%	75%	50%	25%	0%
ALMOB	36	-0.086	-0.016	-0.008	-0.005	-0.001
ALTAL	28	-0.081	-0.016	-0.007	-0.006	-0.001
DEGEO	44	-0.081	-0.014	-0.008	-0.005	0.065
DELUM	36	-0.082	-0.018	-0.008	-0.006	-0.002
GABFG	23	-0.095	-0.031	-0.013	-0.007	-0.002
GADAW	34	-0.058	-0.010	-0.005	-0.003	0.174
GADUF	17	-0.104	-0.007	-0.004	-0.003	-0.000
GAHIW	21	-0.081	-0.016	-0.008	-0.006	-0.002
GASUM	36	-0.081	-0.014	-0.007	-0.005	-0.002
GAWAY	28	-0.056	-0.011	-0.008	-0.005	-0.000
KYGRA	38	-0.082	-0.020	-0.007	-0.004	-0.000
KYMAM	36	-0.082	-0.018	-0.009	-0.005	-0.000
LACAR	24	-0.058	-0.017	-0.007	-0.005	0.009
LACHS	38	-0.082	-0.018	-0.008	-0.004	-0.000
LAHOM	10	-0.022	-0.010	-0.005	-0.003	-0.000
LAROS	42	-0.081	-0.017	-0.007	-0.005	-0.002
MD3EC	39	-0.081	-0.015	-0.007	-0.004	-0.002
MDRGP	37	-0.081	-0.024	-0.011	-0.005	0.107
MSUNI	35	-0.082	-0.015	-0.008	-0.005	-0.002
SCCAP	31	-0.060	-0.014	-0.007	-0.005	-0.002
SCCON	37	-0.059	-0.015	-0.007	-0.005	-0.001
SCDEL	34	-0.060	-0.013	-0.006	-0.005	-0.002
SCLON	36	-0.082	-0.016	-0.009	-0.006	-0.002
SDAPR	3	-0.016	-0.012	-0.011	-0.007	-0.006
SDBPR	3	-0.017	-0.013	-0.012	-0.006	-0.006
SDCUS	17	-0.035	-0.012	-0.008	-0.003	0.066
TNCEN	30	-0.083	-0.020	-0.010	-0.005	-0.003
WVAPC	21	-0.061	-0.019	-0.010	-0.006	0.023
WVGRN	14	-0.061	-0.025	-0.012	-0.008	-0.004
WVNEW	22	-0.081	-0.025	-0.010	-0.006	-0.003

TABLE 3-1 (CONTINUED)

CUMULATIVE FREQUENCY OF OCCURRENCE: PO4,MG/L

SITE	#PTS	% OF SAMPLES GREATER THAN GIVEN VALUE				
		100%	75%	50%	25%	0%
ALMOB	36	-0.07	-0.03	0.02	0.03	0.28
ALTAL	28	-0.10	-0.04	0.01	0.03	0.06
DEGEO	44	-0.10	-0.03	0.02	0.04	0.10
DELUM	36	-0.08	-0.02	0.03	0.04	0.25
GABFG	23	-0.04	-0.02	-0.00	0.03	0.45
GADAW	34	-0.34	-0.03	0.02	0.03	0.06
GADUF	17	-0.08	-0.04	-0.01	0.03	0.12
GAHIW	21	-0.05	-0.03	0.02	0.04	0.06
GASUM	36	-0.09	-0.04	-0.01	0.04	0.09
GAWAY	28	-0.08	-0.01	0.04	0.04	0.65
KYGRA	38	-0.43	-0.03	0.03	0.04	0.92
KYMAM	36	-0.09	-0.03	0.02	0.03	0.53
LACAR	24	-0.07	-0.03	0.03	0.04	0.22
LACHS	38	-0.09	-0.03	0.02	0.04	0.08
LAHOM	10	-0.08	-0.07	-0.04	-0.02	0.04
LAROS	42	-0.10	-0.03	0.02	0.03	0.47
MD3EC	39	-0.06	0.03	0.06	0.27	1.72
MDRGP	37	-0.10	-0.02	0.03	0.04	0.10
MSUNI	35	-0.07	-0.04	0.02	0.03	0.62
SCCAP	31	-0.08	-0.04	0.02	0.03	0.05
SCCON	37	-0.09	-0.03	0.03	0.04	0.56
SCDEL	34	-0.11	-0.04	-0.02	0.03	0.05
SCLON	36	-0.14	-0.04	0.00	0.04	0.71
SDAPR	3	-0.04	-0.03	-0.00	0.03	0.03
SDBPR	3	0.03	0.02	0.03	0.04	0.05
SDCUS	17	-0.05	-0.02	0.04	0.06	0.77
TNCEN	30	-0.11	-0.05	0.02	0.04	0.06
WVAPC	21	-0.08	-0.04	-0.02	0.03	0.05
WVGRN	14	-0.09	-0.06	-0.02	0.04	0.04
WVNEW	22	-0.07	-0.03	-0.01	0.03	0.05

TABLE 3-1 (CONTINUED)

CUMULATIVE FREQUENCY OF OCCURRENCE: BR,MG/L

		% OF SAMPLES GREATER THAN GIVEN VALUE				
SITE	#PTS	100%	75%	50%	25%	0%
ALMOB	36	-0.160	-0.038	-0.020	-0.011	-0.005
ALTAL	28	-0.052	-0.021	-0.019	-0.009	0.112
DEGEO	44	-0.153	-0.036	-0.022	-0.009	0.161
DELUM	36	-0.154	-0.038	-0.016	-0.008	0.186
GABFG	23	-0.169	-0.036	-0.026	-0.012	-0.001
GADAW	34	-0.156	-0.028	-0.017	-0.006	0.073
GADUF	17	-0.185	-0.040	-0.032	-0.019	-0.001
GAHIW	21	-0.163	-0.028	-0.020	-0.005	-0.001
GASUM	36	-0.148	-0.033	-0.022	-0.009	0.213
GAWAY	28	-0.123	-0.031	-0.017	-0.011	-0.004
KYGRA	38	-0.090	-0.031	-0.021	-0.012	0.045
KYMAM	36	-0.165	-0.032	-0.021	-0.015	0.105
LACAR	24	-0.157	-0.035	-0.021	-0.012	-0.001
LACHS	38	-0.166	-0.029	-0.020	-0.009	-0.001
LAHOM	10	-0.050	-0.036	-0.026	-0.024	-0.008
LAROS	42	-0.159	-0.028	-0.020	-0.008	0.142
MD3EC	39	-0.168	-0.031	-0.020	-0.012	0.135
MDRGP	37	-0.136	-0.023	-0.015	-0.007	0.151
MSUNI	35	-0.136	-0.034	-0.019	-0.009	-0.001
SCCAP	31	-0.172	-0.030	-0.021	-0.009	0.074
SCCON	37	-0.174	-0.026	-0.016	-0.006	0.126
SCDEL	34	-0.154	-0.029	-0.018	-0.007	0.017
SCLON	36	-0.149	-0.037	-0.019	-0.011	0.015
SDAPR	3	-0.053	-0.040	-0.051	-0.043	-0.029
SDBPR	3	-0.054	-0.041	-0.049	-0.040	-0.030
SDCUS	17	-0.145	-0.024	-0.014	-0.011	-0.001
TNCEN	30	-0.149	-0.036	-0.020	-0.013	-0.004
WVAPC	21	-0.046	-0.028	-0.013	-0.004	0.184
WVGRN	14	-0.048	-0.030	-0.019	-0.009	-0.004
WVNEW	22	-0.145	-0.030	-0.020	-0.008	0.084

TABLE 3-1 (CONTINUED)

CUMULATIVE FREQUENCY OF OCCURRENCE: NO3,MG/L

		% OF SAMPLES GREATER THAN GIVEN VALUE				
SITE	#PTS	100%	75%	50%	25%	0%
ALMOB	36	0.21	0.50	0.77	1.27	4.56
ALTAL	28	0.26	0.39	0.82	1.69	2.87
DEGEO	44	0.22	0.97	1.42	3.26	16.80
DELUM	36	0.30	0.88	1.54	2.83	12.73
GABFG	23	0.25	0.57	1.11	2.04	5.35
GADAW	34	0.32	0.89	1.26	2.23	6.33
GADUF	17	0.17	0.42	0.66	1.27	2.95
GAHIW	21	0.31	0.59	1.11	1.78	5.68
GASUM	36	0.30	0.75	1.12	1.88	4.95
GAWAY	28	0.14	0.45	0.74	1.47	5.35
KYGRA	38	0.29	0.83	1.47	3.28	13.08
KYMAM	36	0.37	0.73	1.11	1.59	3.79
LACAR	24	-0.01	0.44	0.64	1.05	2.38
LACHS	38	0.21	0.60	0.92	1.85	4.82
LAHOM	10	0.31	0.41	0.98	1.98	3.59
LAROS	42	0.15	0.47	0.73	1.21	3.14
MD3EC	39	0.28	0.83	1.57	2.92	6.84
MDRGP	37	0.38	0.90	1.67	2.93	8.67
MSUNI	35	0.29	0.66	1.00	1.93	7.76
SCCAP	31	0.24	0.49	0.79	1.58	4.69
SCCON	37	0.29	0.62	1.19	2.02	6.61
SCDEL	34	0.28	0.96	1.25	2.16	8.30
SCLON	36	0.25	0.84	1.22	1.89	4.93
SDAPR	3	0.80	0.60	0.86	1.08	1.58
SDBPR	3	0.84	0.63	0.86	1.05	1.58
SDCUS	17	0.37	0.70	1.05	1.56	3.57
TNCEN	30	0.41	0.58	1.12	1.78	6.21
WVAPC	21	0.65	0.80	1.42	2.46	3.33
WVGRN	14	0.56	0.84	1.10	1.50	4.07
WVNEW	22	1.02	1.51	2.43	3.61	7.36

TABLE 3-1 (CONTINUED)

CUMULATIVE FREQUENCY OF OCCURRENCE: SO4,MG/L

SITE	#PTS	% OF SAMPLES GREATER THAN GIVEN VALUE				
		100%	75%	50%	25%	0%
ALMOB	36	0.52	0.82	1.69	2.50	4.86
ALTAL	28	0.45	0.76	1.46	2.45	4.37
DEGEO	44	0.47	1.38	2.12	3.67	27.68
DELUM	36	0.31	1.53	2.85	4.46	6.53
GABFG	23	0.42	1.13	1.63	2.69	12.06
GADAW	34	0.50	1.60	2.55	3.51	17.66
GADUF	17	0.32	0.71	1.09	1.28	4.52
GAHIW	21	0.55	1.25	1.77	3.45	9.81
GASUM	36	0.40	1.45	2.44	3.26	11.70
GAWAY	28	0.23	0.66	1.22	1.91	8.72
KYGRA	38	0.56	1.58	2.67	3.96	27.96
KYMAM	36	0.56	1.27	1.85	2.66	8.79
LACAR	24	0.08	1.02	1.40	2.22	4.61
LACHS	38	0.40	0.76	1.29	2.02	6.47
LAHOM	10	0.33	0.78	1.32	2.13	2.23
LAROS	42	0.28	0.74	1.30	1.64	4.97
MD3EC	39	0.26	1.42	2.03	3.78	12.60
MDRGP	37	0.58	1.25	2.43	3.92	24.80
MSUNI	35	0.20	1.11	1.33	2.20	12.24
SCCAP	31	0.65	1.07	1.39	2.19	12.59
SCCON	37	0.42	0.95	1.93	3.13	13.05
SCDEL	34	0.29	1.66	2.15	3.04	20.27
SCLON	36	0.74	1.47	2.12	3.62	11.69
SDAPR	3	0.34	0.26	0.62	0.95	1.06
SDBPR	3	0.39	0.29	0.68	0.98	0.99
SDCUS	17	0.15	0.59	0.89	1.21	8.84
TNCEN	30	0.52	1.10	1.60	2.24	6.17
WVAPC	21	1.54	1.79	2.69	3.86	7.23
WVGRN	14	0.77	1.29	1.58	2.29	4.93
WVNEW	22	2.41	3.38	4.15	5.80	13.51

TABLE 3-1 (CONTINUED)

CUMULATIVE FREQUENCY OF OCCURRENCE: NH4,MG/L

		% OF SAMPLES GREATER THAN GIVEN VALUE				
SITE	#PTS	100%	75%	50%	25%	0%
ALMOB	36	0.03	0.06	0.11	0.20	0.94
ALTAL	28	0.02	0.06	0.09	0.23	1.10
DEGEO	44	0.05	0.23	0.46	0.69	2.47
DELUM	36	0.01	0.12	0.35	0.51	1.39
GABFG	23	0.02	0.07	0.19	0.45	1.48
GADAW	34	0.04	0.28	0.48	0.62	1.60
GADUF	17	0.04	0.08	0.14	0.28	0.98
GAHIW	21	0.03	0.10	0.20	0.34	1.92
GASUM	36	0.05	0.12	0.23	0.42	1.56
GAWAY	28	-0.00	0.07	0.17	0.45	0.89
KYGRA	38	-0.01	0.10	0.23	0.40	1.96
KYMAM	36	-0.00	0.12	0.23	0.32	0.91
LACAR	24	-0.01	0.27	0.48	0.71	2.18
LACHS	38	0.07	0.12	0.19	0.38	1.01
LAHOM	10	0.06	0.09	0.16	0.23	0.31
LAROS	42	0.02	0.09	0.15	0.26	0.76
MD3EC	39	-0.01	0.09	0.20	0.36	0.64
MDRGP	37	0.03	0.13	0.22	0.42	1.60
MSUNI	35	0.02	0.15	0.21	0.42	2.11
SCCAP	31	0.02	0.06	0.09	0.16	1.05
SCCON	37	-0.00	0.09	0.16	0.36	1.24
SCDEL	34	-0.02	0.13	0.25	0.41	1.46
SCLON	36	0.05	0.15	0.25	0.46	2.36
SDAPR	3	0.07	0.06	0.15	0.35	0.71
SDBPR	3	0.05	0.03	0.13	0.34	0.72
SDCUS	17	0.02	0.22	0.34	0.55	2.36
TNCEN	30	-0.00	0.10	0.16	0.29	0.88
WVAPC	21	0.10	0.15	0.29	0.43	0.85
WVGRN	14	0.03	0.10	0.13	0.22	0.61
WVNEW	22	0.09	0.25	0.43	0.61	1.13

TABLE 3-1 (CONTINUED)

CUMULATIVE FREQUENCY OF OCCURRENCE: NA,MG/L

		% OF SAMPLES GREATER THAN GIVEN VALUE				
SITE	#PTS	100%	75%	50%	25%	0%
ALMOB	36	0.027	0.174	0.360	0.665	2.471
ALTAL	28	0.015	0.088	0.176	0.315	0.959
DEGEO	44	0.031	0.070	0.208	0.478	1.956
DELUM	36	0.026	0.057	0.156	0.245	0.912
GABFG	23	0.034	0.072	0.153	0.345	1.146
GADAW	34	0.014	0.034	0.083	0.183	2.685
GADUF	17	0.015	0.043	0.070	0.138	0.333
GAHIW	21	0.016	0.030	0.072	0.168	0.525
GASUM	36	0.017	0.047	0.118	0.227	0.967
GAWAY	28	0.025	0.059	0.267	0.386	3.537
KYGRA	38	-0.004	0.017	0.045	0.132	0.524
KYMAM	36	0.015	0.029	0.050	0.089	0.481
LACAR	24	0.008	0.083	0.186	0.371	1.845
LACHS	38	0.022	0.062	0.111	0.337	3.354
LAHOM	10	0.062	0.070	0.109	0.244	1.155
LAROS	42	0.015	0.073	0.220	0.401	2.579
MD3EC	39	0.069	0.231	0.403	0.613	3.985
MDRGP	37	-0.009	0.016	0.031	0.056	0.472
MSUNI	35	0.012	0.059	0.093	0.218	1.392
SCCAP	31	0.079	0.239	0.603	0.952	3.399
SCCON	37	0.030	0.066	0.147	0.376	5.291
SCDEL	34	0.023	0.052	0.115	0.324	1.333
SCLON	36	0.018	0.052	0.084	0.231	2.362
SDAPR	3	0.039	0.029	0.093	0.155	0.177
SDBPR	3	0.031	0.023	0.085	0.151	0.186
SDCUS	17	0.013	0.021	0.040	0.077	4.125
TNCEN	30	0.008	0.033	0.076	0.118	0.318
WVAPC	21	0.005	0.031	0.067	0.085	0.263
WVGRN	14	0.011	0.016	0.027	0.053	0.428
WVNEW	22	0.021	0.035	0.067	0.091	0.137

TABLE 3-1 (CONTINUED)

CUMULATIVE FREQUENCY OF OCCURRENCE: K,MG/L

		% OF SAMPLES GREATER THAN GIVEN VALUE				
SITE	#PTS	100%	75%	50%	25%	0%
ALMOB	36	0.002	0.012	0.032	0.055	0.188
ALTAL	28	-0.013	0.020	0.029	0.042	2.490
DEGEO	44	-0.006	0.020	0.026	0.052	0.257
DELUM	36	-0.010	0.012	0.025	0.051	0.207
GABFG	23	0.009	0.023	0.030	0.072	0.430
GADAW	34	-0.013	0.015	0.028	0.073	0.241
GADUF	17	0.006	0.018	0.025	0.038	0.276
GAHIW	21	-0.013	0.016	0.028	0.078	0.345
GASUM	36	0.001	0.015	0.024	0.036	0.173
GAWAY	28	-0.004	0.012	0.029	0.075	0.304
KYGRA	38	-0.128	0.011	0.022	0.037	0.177
KYMAM	36	-0.011	0.012	0.018	0.027	0.048
LACAR	24	-0.004	0.022	0.033	0.042	0.274
LACHS	38	-0.010	0.014	0.029	0.052	0.187
LAHOM	10	0.014	0.019	0.029	0.037	0.064
LAROS	42	-0.004	0.016	0.036	0.057	0.138
MD3EC	39	-0.003	0.015	0.024	0.038	0.163
MDRGP	37	-0.013	0.006	0.014	0.023	0.206
MSUNI	35	0.014	0.023	0.040	0.099	0.403
SCCAP	31	0.020	0.030	0.042	0.081	0.261
SCCON	37	0.014	0.039	0.063	0.091	0.447
SCDEL	34	0.005	0.021	0.033	0.068	0.226
SCLON	36	0.010	0.029	0.046	0.096	0.384
SDAPR	3	0.044	0.033	0.095	0.160	0.201
SDBPR	3	0.032	0.024	0.076	0.137	0.183
SDCUS	17	0.007	0.022	0.044	0.071	0.736
TNCEN	30	0.010	0.015	0.023	0.051	0.090
WVAPC	21	0.010	0.016	0.023	0.029	0.278
WVGRN	14	0.015	0.022	0.031	0.082	0.255
WVNEW	22	0.017	0.023	0.046	0.063	0.110

TABLE 3-1 (CONTINUED)

CUMULATIVE FREQUENCY OF OCCURRENCE: CA,MG/L

		% OF SAMPLES GREATER THAN GIVEN VALUE				
SITE	#PTS	100%	75%	50%	25%	0%
ALMOB	36	-0.03	0.04	0.08	0.13	0.49
ALTAL	28	-0.01	0.08	0.12	0.16	0.55
DEGEO	44	-0.03	0.06	0.10	0.25	1.08
DELUM	36	-0.03	0.04	0.08	0.14	0.69
GABFG	23	-0.02	0.02	0.08	0.18	0.48
GADAW	34	-0.03	0.04	0.09	0.20	0.57
GADUF	17	-0.02	0.02	0.03	0.08	0.20
GAHIW	21	-0.02	0.03	0.07	0.14	1.14
GASUM	36	-0.02	0.04	0.10	0.17	0.65
GAWAY	28	-0.03	-0.01	0.06	0.21	0.60
KYGRA	38	-0.21	0.07	0.16	0.43	2.45
KYMAM	36	-0.02	0.06	0.10	0.20	0.30
LACAR	24	-0.02	0.05	0.13	0.18	0.41
LACHS	38	-0.03	0.04	0.08	0.17	0.85
LAHOM	10	-0.02	0.06	0.10	0.22	0.34
LAROS	42	-0.03	0.04	0.09	0.16	0.52
MD3EC	39	-0.03	0.03	0.08	0.18	0.41
MDRGP	37	-0.02	0.07	0.13	0.23	1.84
MSUNI	35	-0.03	0.06	0.12	0.32	2.16
SCCAP	31	0.03	0.05	0.10	0.18	0.57
SCCON	37	-0.03	0.04	0.09	0.16	0.53
SCDEL	34	-0.03	0.04	0.09	0.23	1.22
SCLON	36	-0.02	0.04	0.08	0.11	0.62
SDAPR	3	0.27	0.21	0.38	0.59	0.90
SDBPR	3	0.32	0.24	0.39	0.59	1.02
SDCUS	17	0.08	0.17	0.41	0.62	4.12
TNCEN	30	0.03	0.07	0.14	0.23	0.76
WVAPC	21	0.04	0.15	0.21	0.27	1.13
WVGRN	14	0.03	0.05	0.13	0.21	0.38
WVNEW	22	0.05	0.20	0.24	0.45	1.35

TABLE 3-1 (CONTINUED)

CUMULATIVE FREQUENCY OF OCCURRENCE: MG,MG/L

		% OF SAMPLES GREATER THAN GIVEN VALUE				
SITE	#PTS	100%	75%	50%	25%	0%
ALMOB	36	0.003	0.025	0.046	0.085	0.308
ALTAL	28	0.007	0.020	0.028	0.042	0.125
DEGEO	44	-0.053	0.025	0.044	0.082	0.261
DELUM	36	0.005	0.018	0.033	0.060	0.158
GABFG	23	0.006	0.015	0.029	0.055	0.119
GADAW	34	0.002	0.009	0.023	0.046	0.342
GADUF	17	0.001	0.006	0.013	0.023	0.041
GAHIW	21	-0.002	0.008	0.018	0.036	0.134
GASUM	36	0.004	0.011	0.024	0.036	0.131
GAWAY	28	-0.005	0.010	0.041	0.059	0.444
KYGRA	38	-0.032	0.007	0.021	0.059	0.235
KYMAM	36	-0.042	0.007	0.014	0.024	0.122
LACAR	24	-0.002	0.020	0.028	0.055	0.237
LACHS	38	-0.005	0.010	0.020	0.056	0.437
LAHOM	10	0.006	0.013	0.029	0.041	0.155
LAROS	42	0.000	0.012	0.031	0.051	0.324
MD3EC	39	0.006	0.027	0.045	0.067	0.402
MDRGP	37	-0.005	0.008	0.016	0.030	0.140
MSUNI	35	0.004	0.012	0.024	0.048	0.200
SCCAP	31	0.016	0.039	0.080	0.120	0.427
SCCON	37	-0.005	0.010	0.029	0.049	0.627
SCDEL	34	-0.005	0.009	0.024	0.064	0.204
SCLON	36	-0.003	0.007	0.016	0.035	0.296
SDAPR	3	0.058	0.043	0.065	0.084	0.116
SDBPR	3	0.065	0.049	0.068	0.084	0.127
SDCUS	17	0.011	0.016	0.041	0.053	0.409
TNCEN	30	0.002	0.013	0.019	0.030	0.078
WVAPC	21	0.006	0.019	0.023	0.037	0.117
WVGRN	14	0.005	0.009	0.010	0.027	0.128
WVNEW	22	0.019	0.028	0.043	0.078	0.232

TABLE 3-2

PRECIPITATION WEIGHTED MEAN DATA

SITE	#PTS	PPTN CM	PH	COND UMHOS/CM	F MG/L	CL MG/L	NO2 MG/L	PO4 MG/L	BR MG/L	NO3 MG/L	SO4 MG/L	NH4 MG/L	NA MG/L	K MG/L	CA MG/L	MG MG/L
ALMOB	36	159.35	4.57	13.7	0.004	0.666	-0.013	0.04	-0.032	0.68	1.29	0.12	0.368	0.028	0.06	0.046
ALTAL	28	83.06	4.64	12.0	0.012	0.389	-0.014	-0.01	-0.017	0.73	1.24	0.18	0.196	0.136	0.08	0.029
DEGEO	44	75.24	4.42	20.2	0.012	0.716	-0.013	0.01	-0.022	1.24	1.98	0.34	0.382	0.026	0.07	0.056
DELUM	36	106.07	4.22	27.8	0.015	0.349	-0.014	0.02	-0.022	1.45	2.82	0.31	0.168	0.053	0.08	0.037
GABFG	23	40.59	4.42	18.1	0.008	0.339	-0.034	0.02	-0.032	0.94	1.80	0.17	0.190	0.037	0.06	0.028
GADAW	34	89.27	4.42	18.4	0.013	0.191	-0.011	0.00	-0.024	1.06	2.06	0.35	0.089	0.025	0.06	0.016
GADUF	17	35.71	4.59	12.4	0.009	0.235	-0.015	0.00	-0.051	0.75	1.24	0.18	0.117	0.045	0.03	0.016
GAHIW	21	111.30	4.50	14.1	0.008	0.234	-0.022	0.02	-0.027	0.78	1.46	0.16	0.123	0.021	0.05	0.018
GASUM	36	102.62	4.32	22.4	0.013	0.315	-0.012	0.00	-0.016	1.05	2.32	0.21	0.166	0.024	0.08	0.026
GAWAY	28	89.10	4.76	10.0	0.007	0.412	-0.011	0.02	-0.034	0.64	1.00	0.19	0.225	0.037	0.07	0.031
KYGRA	37	72.92	4.36	18.5	0.011	0.101	-0.014	-0.02	-0.024	1.00	1.94	0.15	0.050	0.017	0.08	0.011
KYMAM	36	118.71	4.38	18.2	0.009	0.130	-0.009	-0.01	-0.027	1.02	1.91	0.19	0.067	0.014	0.09	0.013
LACAR	23	72.31	5.09	9.5	0.022	0.383	-0.012	0.02	-0.025	0.71	1.45	0.62	0.210	0.034	0.11	0.030
LACHS	38	92.79	4.61	12.8	0.009	0.334	-0.015	-0.00	-0.023	0.95	1.24	0.21	0.191	0.029	0.08	0.029
LAHOM	10	22.81	4.55	14.8	0.008	0.460	-0.008	-0.03	-0.030	1.14	1.41	0.19	0.259	0.030	0.15	0.041
LAROS	42	112.01	4.70	10.4	0.005	0.462	-0.011	-0.00	-0.020	0.64	1.06	0.14	0.261	0.026	0.07	0.036
MD3EC	39	81.66	4.24	27.8	0.012	0.711	-0.014	0.13	-0.039	1.55	2.50	0.23	0.460	0.024	0.08	0.051
MDRGP	37	63.18	4.14	30.3	0.016	0.123	-0.011	0.01	-0.005	1.84	3.35	0.32	0.037	0.025	0.22	0.022
MSUNI	35	87.59	4.60	13.1	0.010	0.255	-0.019	-0.00	-0.025	0.99	1.39	0.24	0.151	0.047	0.12	0.027
SCCAP	31	70.62	4.49	19.0	0.014	1.310	-0.010	0.01	-0.023	0.84	1.59	0.13	0.699	0.048	0.10	0.093
SCCON	37	70.51	4.38	19.6	0.014	0.338	-0.012	0.01	-0.006	1.13	1.94	0.21	0.176	0.054	0.07	0.022
SCDEL	34	60.64	4.27	24.7	0.014	0.339	-0.015	0.00	-0.022	1.30	2.45	0.24	0.184	0.037	0.08	0.027
SCLON	36	94.80	4.37	20.0	0.014	0.301	-0.011	0.00	-0.030	1.11	2.02	0.25	0.162	0.042	0.06	0.022
SDAPR	3	0.30	5.68	7.2	0.016	0.091	-0.010	0.01	-0.043	0.97	0.86	0.36	0.144	0.156	0.66	0.092
SDBPR	3	0.30	5.65	7.3	0.015	0.083	-0.010	0.04	-0.041	0.98	0.88	0.36	0.145	0.137	0.71	0.097
SDCUS	17	24.57	5.39	7.0	0.012	0.067	-0.000	0.03	-0.012	1.07	0.83	0.42	0.053	0.047	0.37	0.039
TNCEN	30	86.54	4.48	15.7	0.008	0.178	-0.014	-0.00	-0.027	1.03	1.71	0.19	0.092	0.033	0.16	0.021
WVAPC	21	48.88	4.18	30.4	0.023	0.228	-0.017	-0.01	0.024	1.52	3.14	0.29	0.063	0.031	0.21	0.024
WVGRN	14	38.56	4.41	17.7	0.012	0.083	-0.024	-0.01	-0.018	1.12	1.85	0.17	0.037	0.061	0.11	0.024
WVNEW	22	53.82	3.96	50.8	0.050	0.417	-0.015	-0.01	-0.025	2.43	4.93	0.40	0.069	0.043	0.27	0.048

4.0 COMPARISON OF FIELD AND LABORATORY MEASUREMENTS

Presented in Figure 4-1 are plots comparing field and laboratory pH and conductivity measurements for each site for all samples analyzed since 1983, samples numbered 1-4600. The 1988 samples have ID number 3489-4541. The sample number is plotted on the x axis and (field measured value - lab measured value) is plotted on the y axis. The perfect agreement zero difference line is also plotted. The y axis limits for pH are -0.5 to +0.5. The y axis limits for conductivity are -10.0 to +10.0. Values greater than the limits are plotted at the limits.

In order to give a comparison of pH for fairly stable samples only, samples of pH greater than 4.8 were excluded from the pH plots.

Procedures are employed to insure good field pH and conductivity measurements. Once every four months, field supplies are sent out, including 1 liter of each of the following reference solutions:

pH 3.5 buffer
pH 4.5 buffer
pH 4.5 low ionic strength solution
43 μmho/cm conductivity reference solution

The site operators are instructed to calibrate their meters as indicated by their state agency and to analyze the reference solutions listed above just as they do a sample.

Blind audit surveys of field site pH and conductivity measurements are also conducted every 6 months as indicated in Section 1.0. Gravimetric audits are conducted annually.

In addition, each state agency is sent a monthly report giving the average difference of field and laboratory pH and conductivity measurements.

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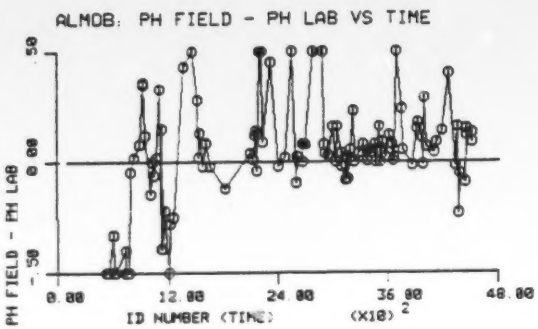
Figure 4-1

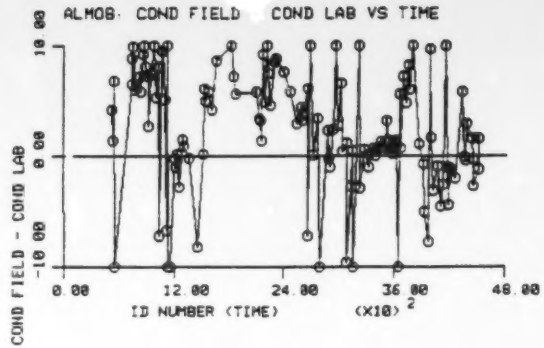
pH and Conductivity Plots of (Field - Lab) Data vs. Time

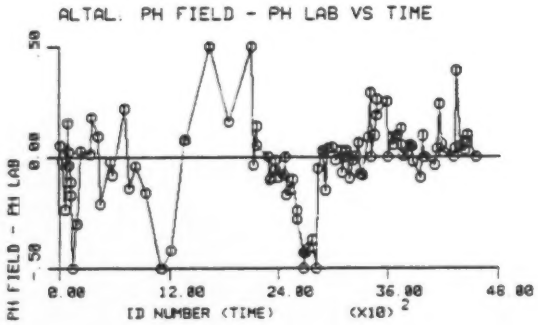
pH



ALMOB

CONDUCTIVITY





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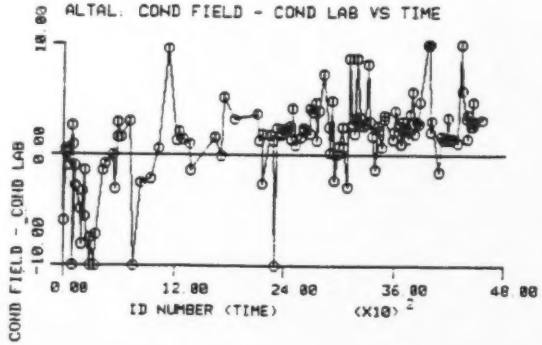
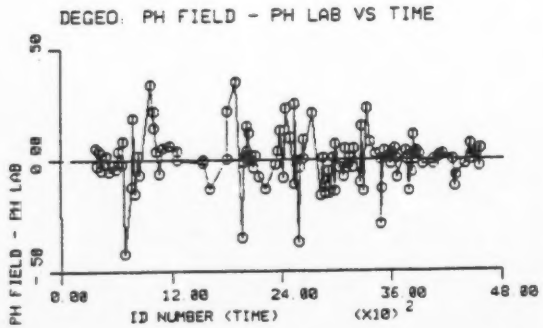




DEGEO

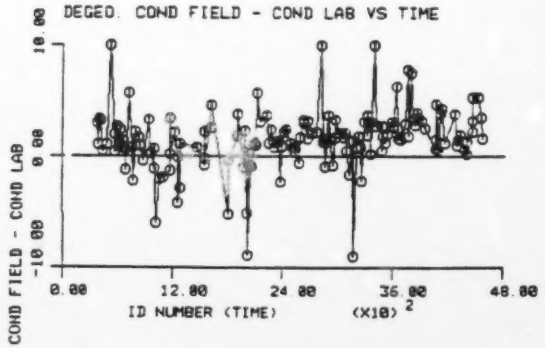


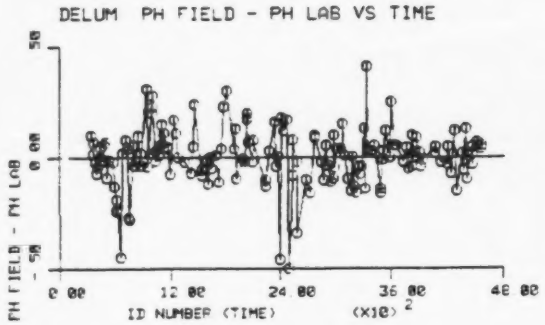
Figure 4-1 (continued)

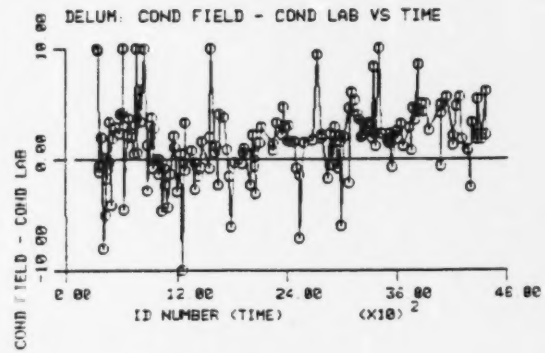
pH and Conductivity Plots of (Field - Lab) Data vs. Time

pH

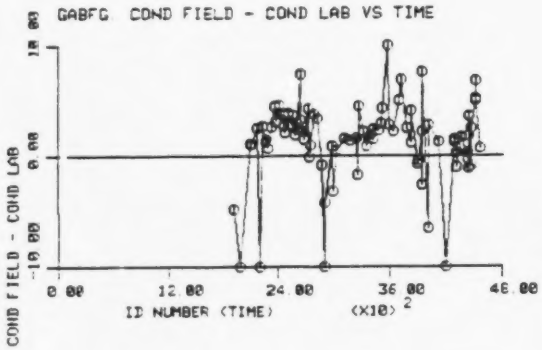
CONDUCTIVITY

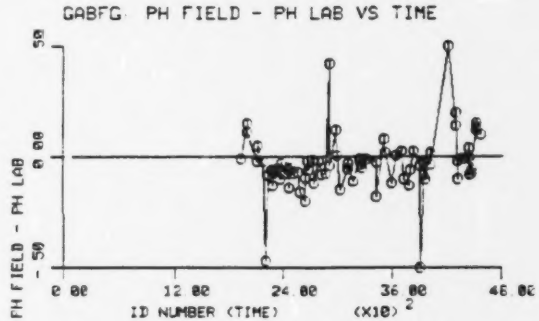
DELUM





GABFG





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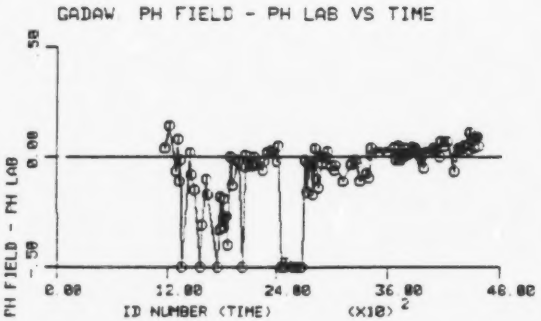


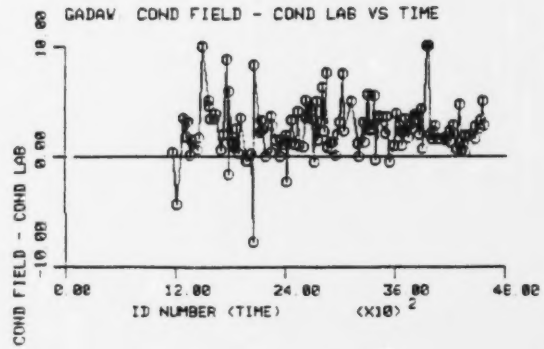


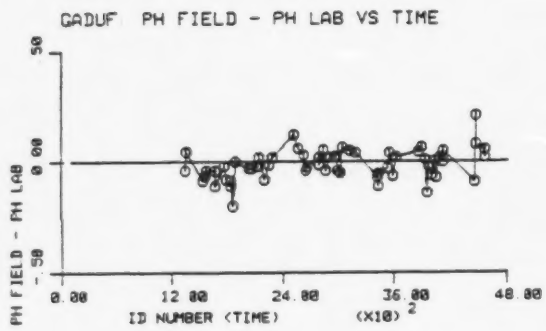
Figure 4-1 (continued)

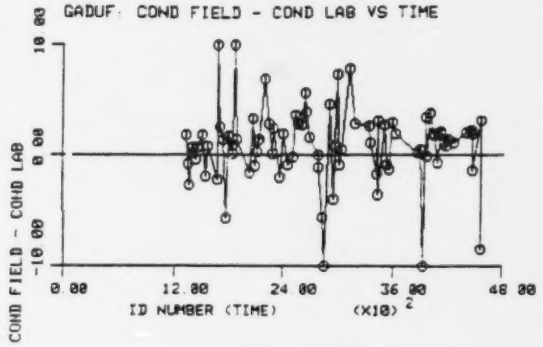
pH and Conductivity Plots of (Field - Lab) Data vs. Time

pH

CONDUCTIVITY

GADUF





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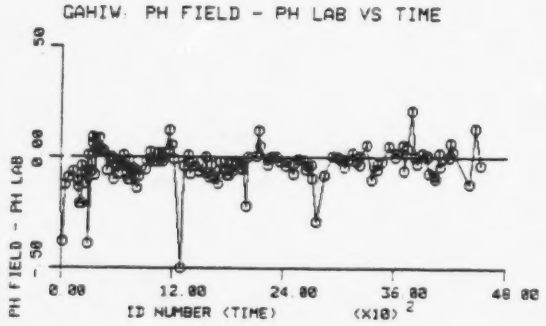

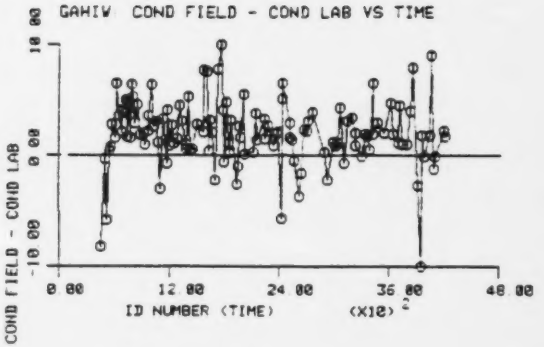

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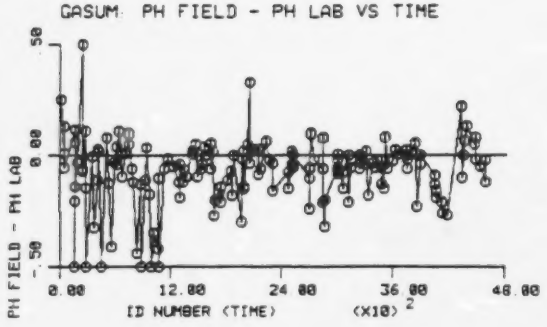


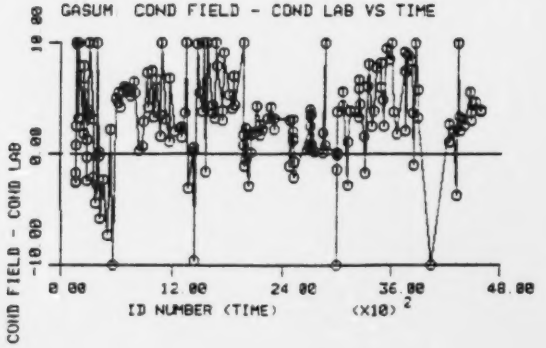


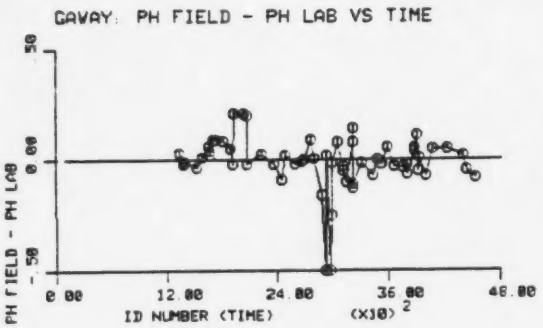
Figure 4-1 (continued)

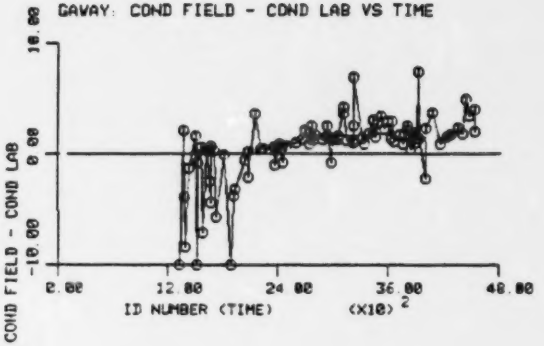
pH and Conductivity Plots of (Field - Lab) Data vs. Time

pH

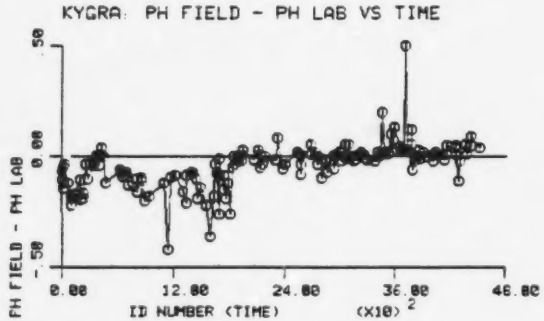
CONDUCTIVITY

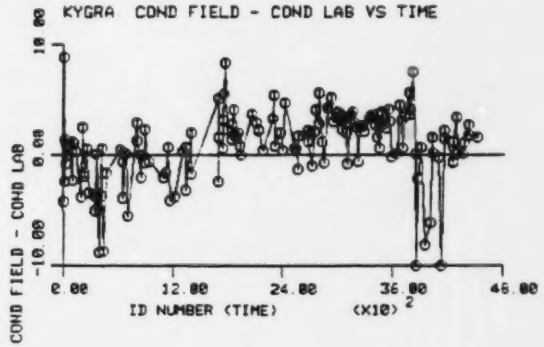
GAWAY





KYGRA





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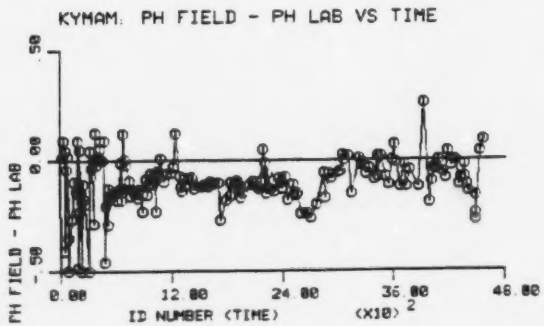


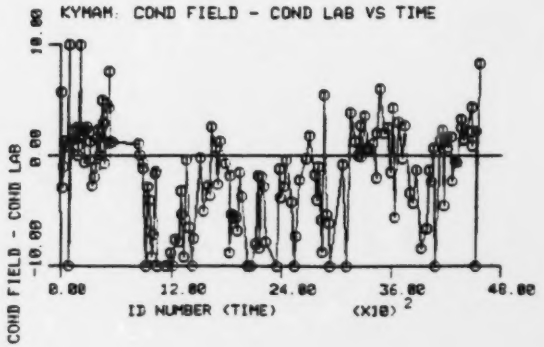


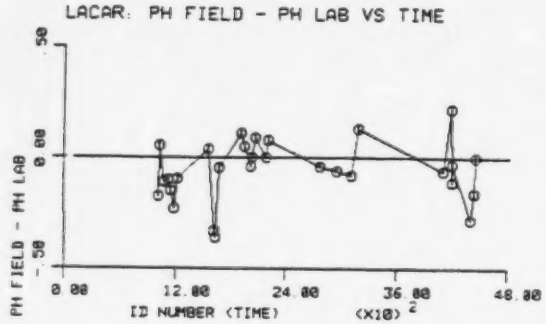
Figure 4-1 (continued)

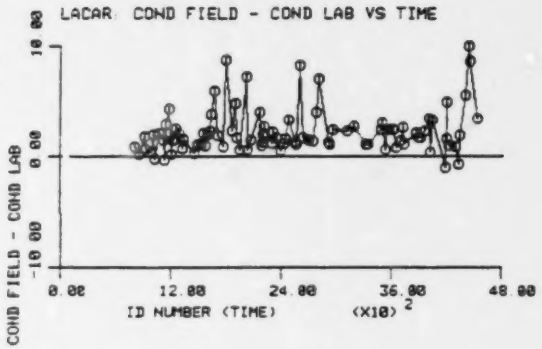
pH and Conductivity Plots of (Field - Lab) Data vs. Time

pH

CONDUCTIVITY

LACAR





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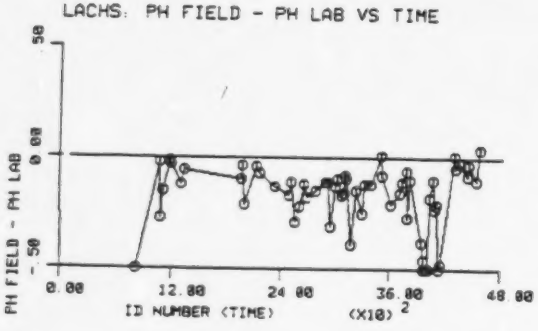

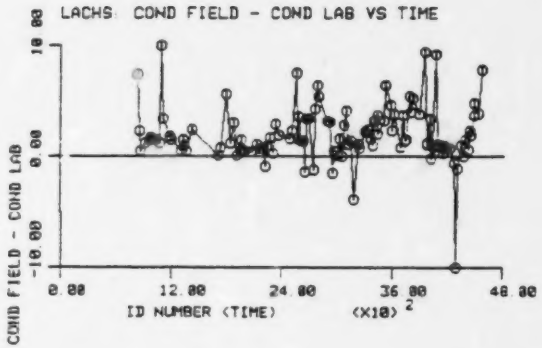

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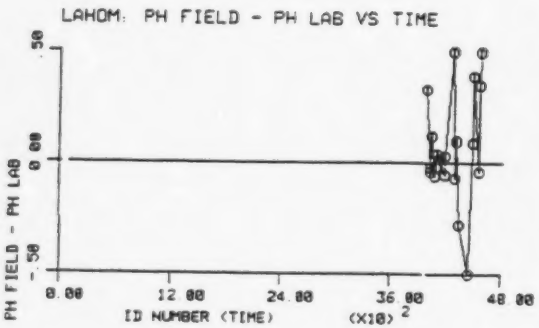


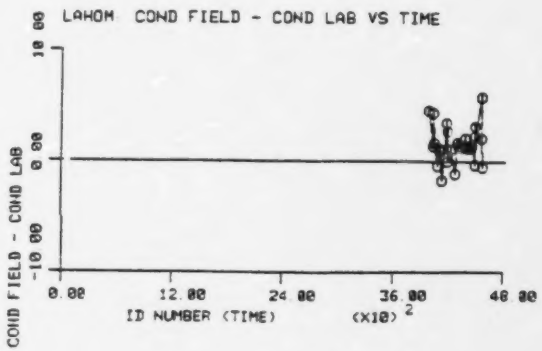
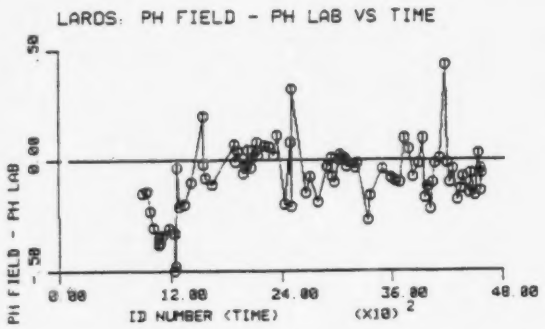


Figure 4-1 (continued)

pH and Conductivity Plots of (Field - Lab) Data vs. Time

pH

CONDUCTIVITY



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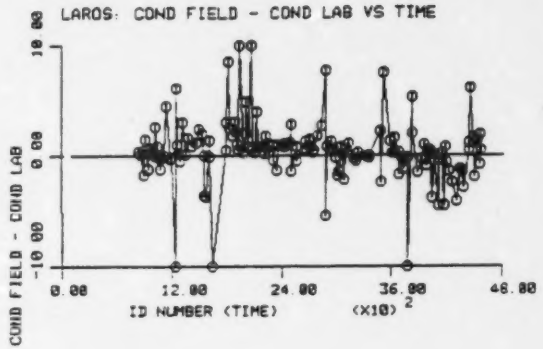

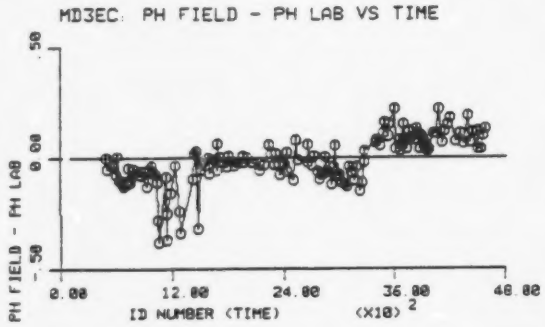

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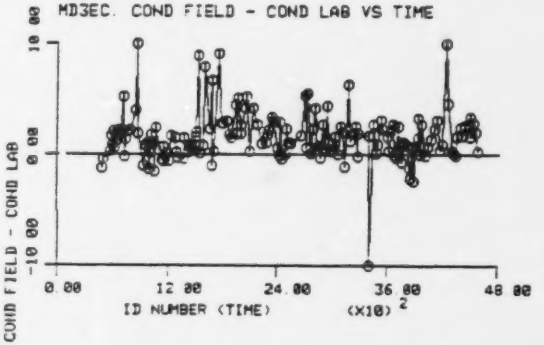

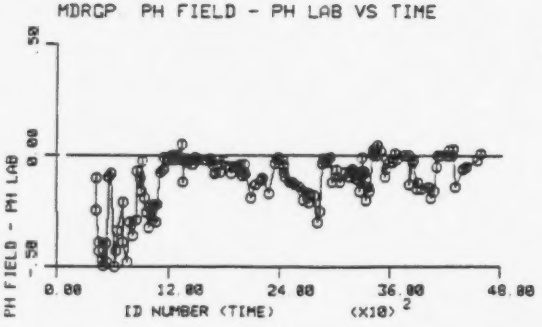

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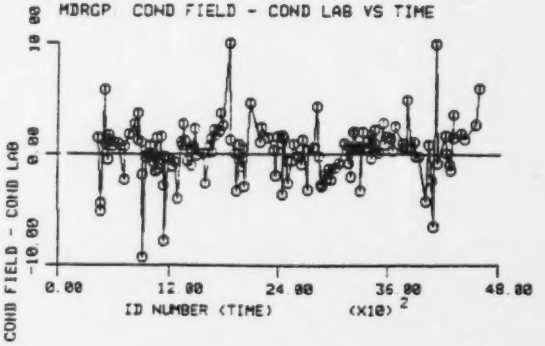


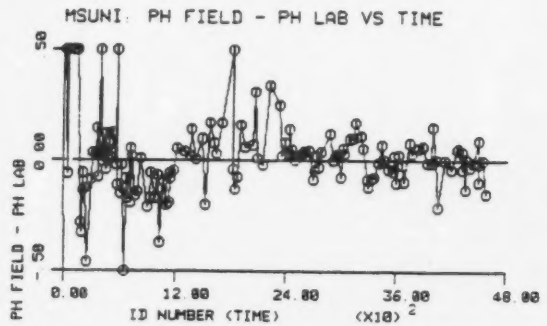
Figure 4-1 (continued)

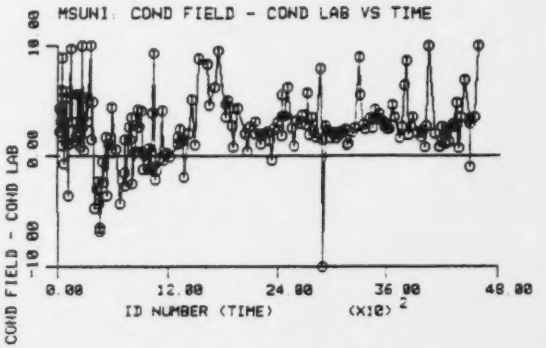
pH and Conductivity Plots of (Field - Lab) Data vs. Time

pH

CONDUCTIVITY

MSUNI





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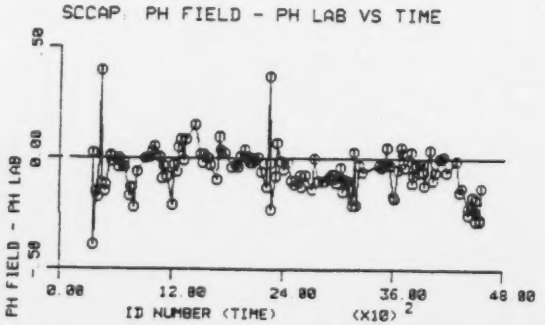

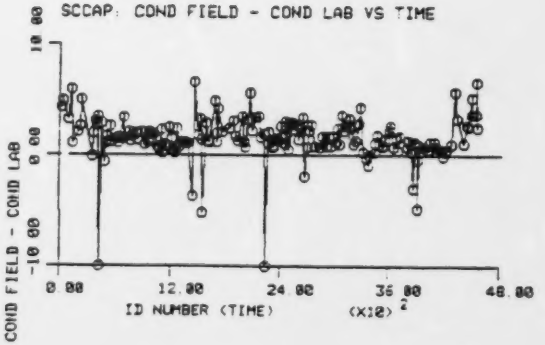

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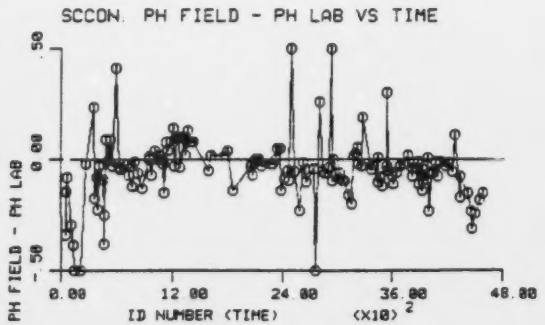


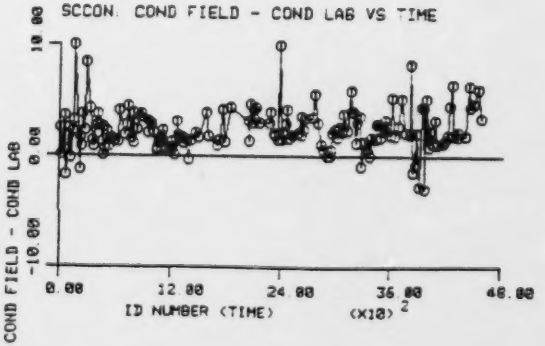


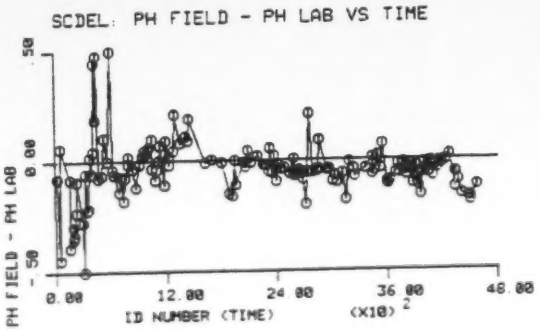
Figure 4-1 (continued)

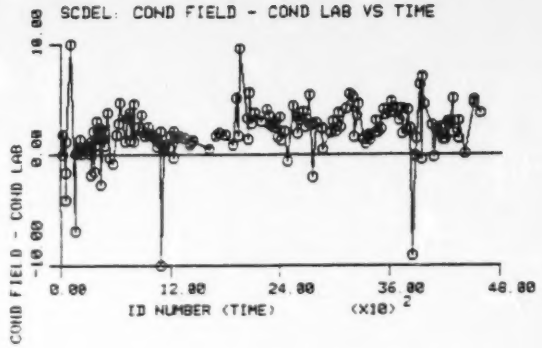
pH and Conductivity Plots of (Field - Lab) Data vs. Time

pH

CONDUCTIVITY

SCDEL





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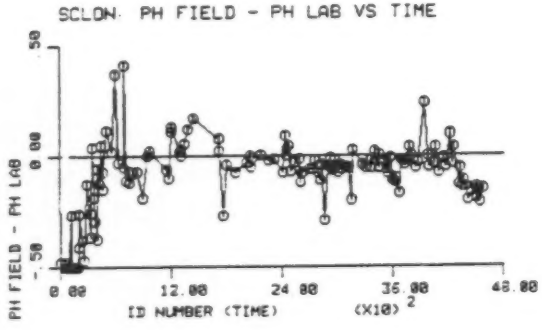

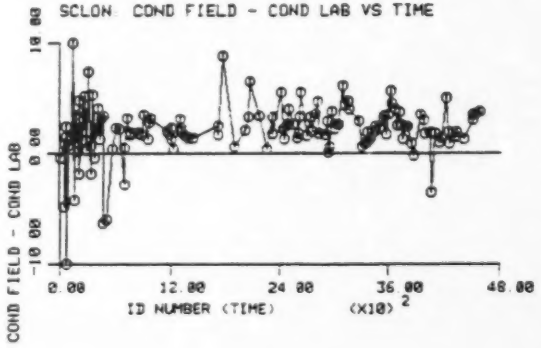

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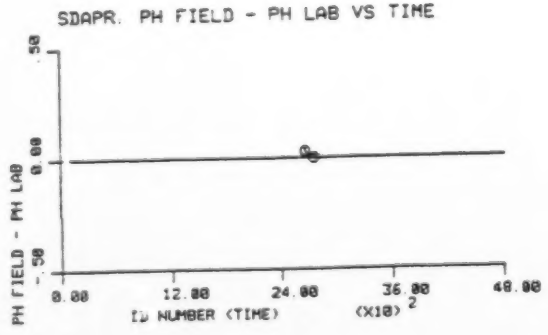


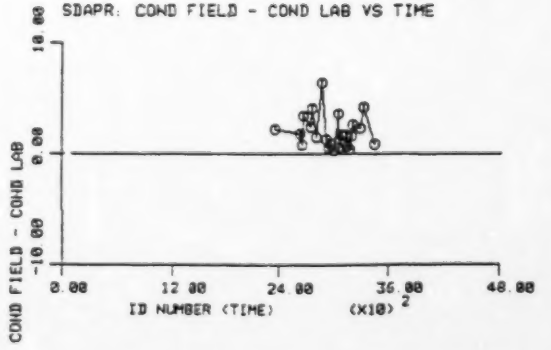


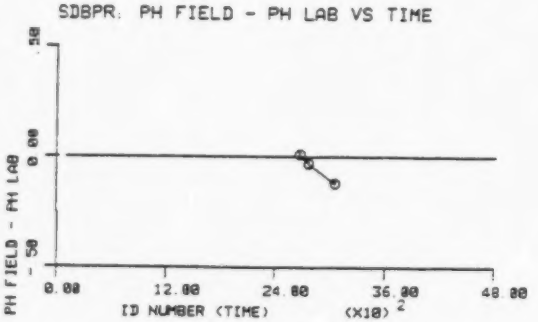
Figure 4-1 (continued)

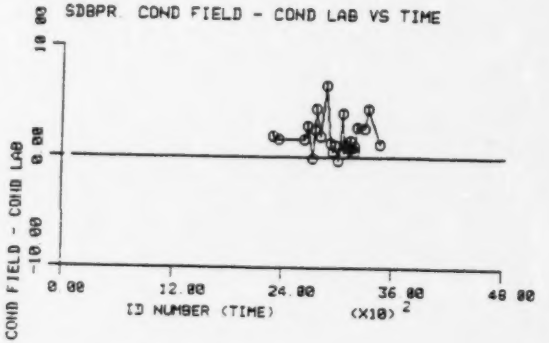
pH and Conductivity Plots of (Field - Lab) Data vs. Time

pH

CONDUCTIVITY

SDBPR





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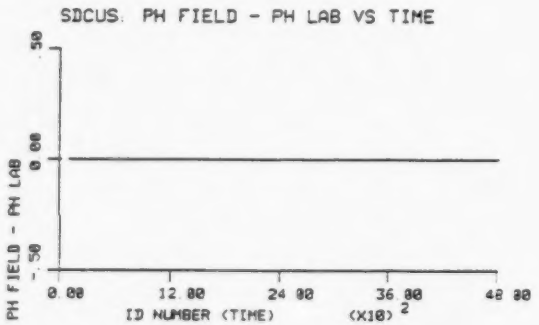

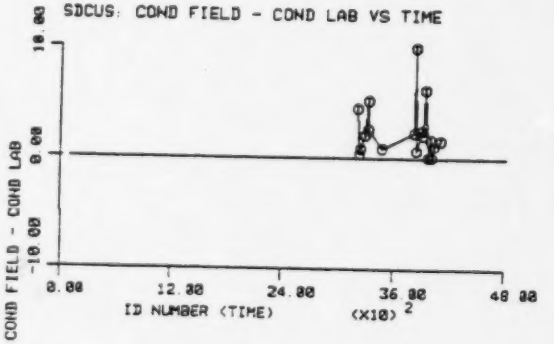

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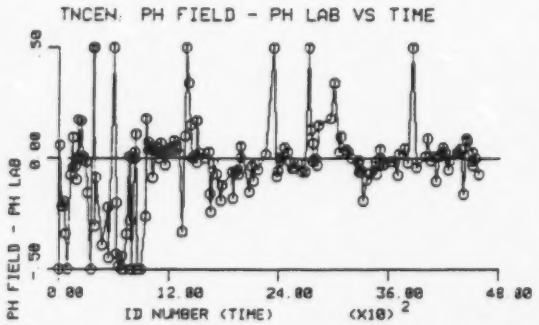


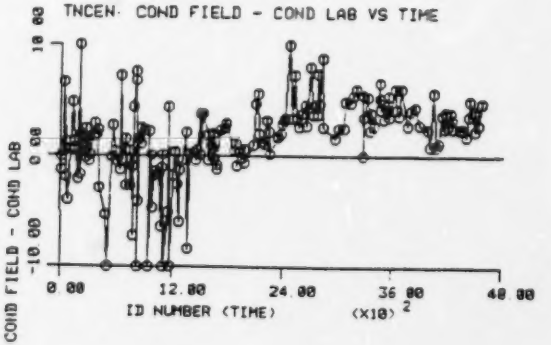
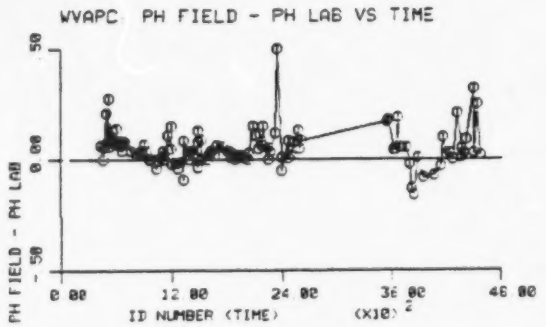


Figure 4-1 (continued)

pH and Conductivity Plots of (Field - Lab) Data vs. Time

pH

CONDUCTIVITY



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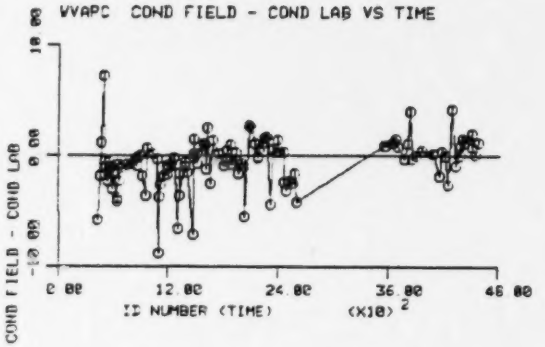

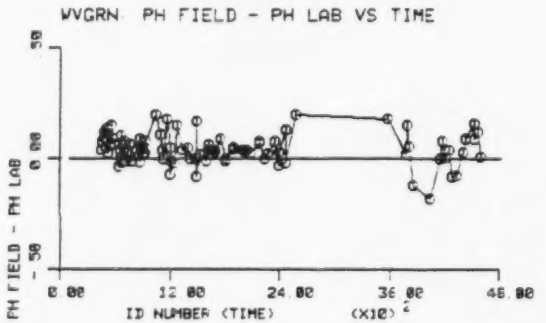

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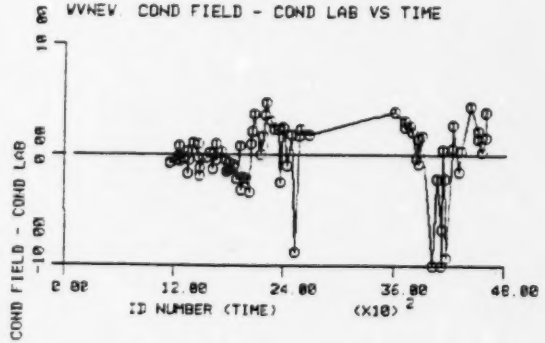
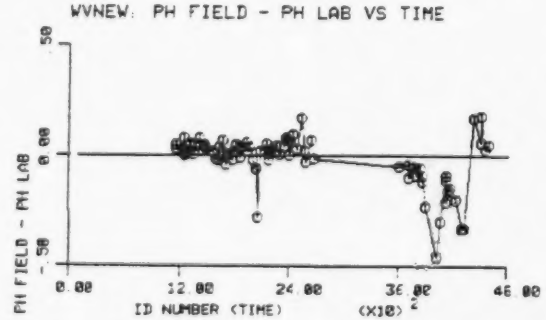
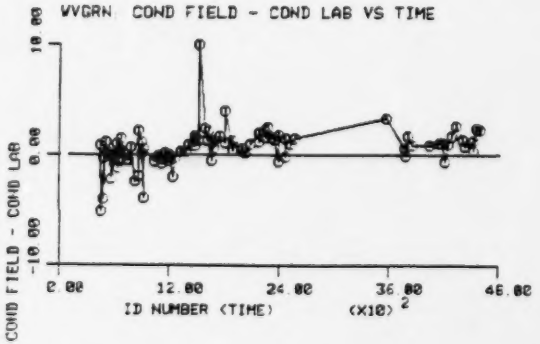




WVNEW



APPENDIX A

QUALITY CONTROL INFORMATION

January 1988 - December 1988

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Quality control duplicate and spike samples were included with all analyses performed by GGC. The duplicate samples were actual samples randomly chosen for duplicate analysis by each analyst. The spike samples were calibration standards prepared from separate stock solutions.

Quality control plots for each analysis are included in this Appendix. Control limits obtained from these plots are given in Table A-1. These control limits will be used in the future to evaluate each analytical run and make decisions on reanalysis.

An estimate of detection limits can be obtained by multiplying the UCL for the lowest range of each analyte by (2/3.27) = (.61). This is two times the average difference on the lowest analytical range - the concentration at which the data should be known to +-50%.

The Julian date of analysis is given above each data point on each plot. The Julian dates of analyses vary on each plot, but range from approximately 1988 034 on the left to '89 048 on the right.

Table A-1

PROJECT EPAAR88 11-OCT-89
UPDATE OF QC CONTROL LIMITS

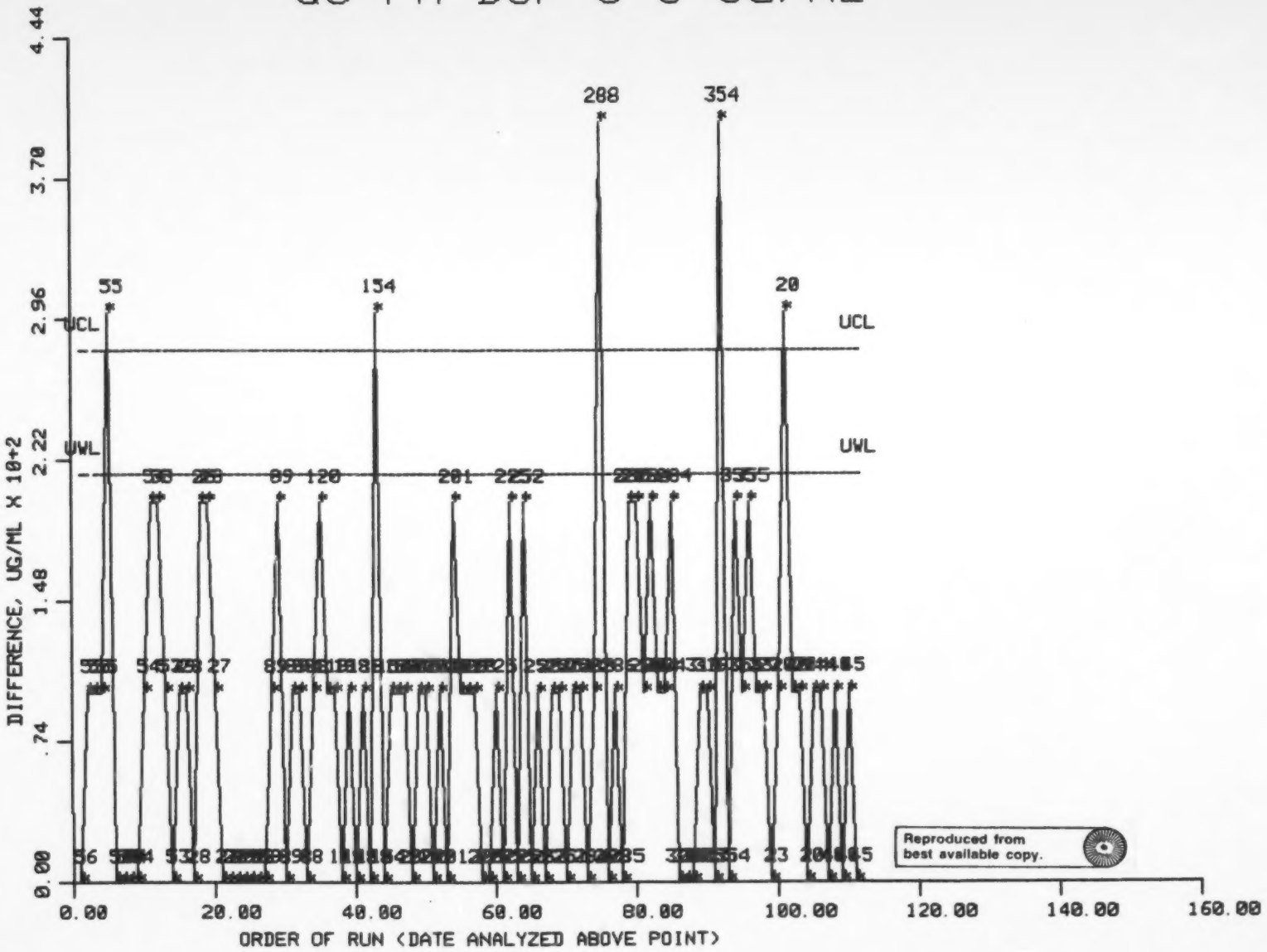
ANALYTE	CONC'N RANGE UG/ML	# POINTS	UWL UG/ML	UCL UG/ML	PAGE
PH DUP	0-5	111	.021482	.0279865	A4
PH DUP	5-7	6	.0209167	.0272501	
PH SPK	0-5	17	.0280529	.036547	
GRAN DUP	0-100	97	2.66526	3.47227	A7
GRAN DUP	100->100	7	5.34272	6.96044	
GRAN SPK	0-100	117	2.81678	3.66967	
GRAN SPK	100->100	117	3.71566	4.84072	
COND DUP	0-36.8	104	.479673	.624913	A11
COND DUP	36.8-75	14	.937322	1.22113	
COND DUP	75-144.7	4	1.50507	1.96079	
COND SPK	0-36.8	167	.83106	1.0827	
COND SPK	36.8-75	101	1.99385	2.59756	
COND SPK	75-144.7	29	11.0559	14.4035	
NH4 DUP	0-.248	69	9.62894E-03	.0125445	A17
NH4 DUP	.248-.98	40	.0142756	.0185981	
NH4 DUP	.98-2.9	3	4.26701E-03	5.55901E-03	
NH4 SPK	0-.248	2	.0151855	.0197835	
NH4 SPK	.248-.98	124	.0328648	.0428159	
NH4 SPK	.98-2.9	139	.0673999	.0878078	
F DUP	0-.099	81	4.70393E-03	6.12822E-03	A23
F SPK	0-.099	85	3.88017E-03	5.05504E-03	
F SPK	.099-.984	95	.0133321	.0173689	
F SPK	.984-5.66	88	.0798066	.103971	
CL DUP	0-.198	41	5.30161E-03	6.90688E-03	A27
CL DUP	.198-1.96	51	.0128256	.0167091	
CL DUP	1.96-11.3	3	.0169843	.0221269	
CL SPK	0-.198	83	5.73067E-03	7.46585E-03	
CL SPK	.198-1.96	95	.0347067	.0452155	
CL SPK	1.96-11.3	88	.155557	.202658	
PO4 DUP	0-.99	44	.0189961	.024748	A33
PO4 SPK	0-.99	85	.0550871	.0717669	
PO4 SPK	.99-9.84	84	.189412	.246764	
PO4 SPK	9.84-56.6	88	.751428	.978952	
BR DUP	0-.99	1	5.52198E-03	7.19398E-03	A37

Table A-1

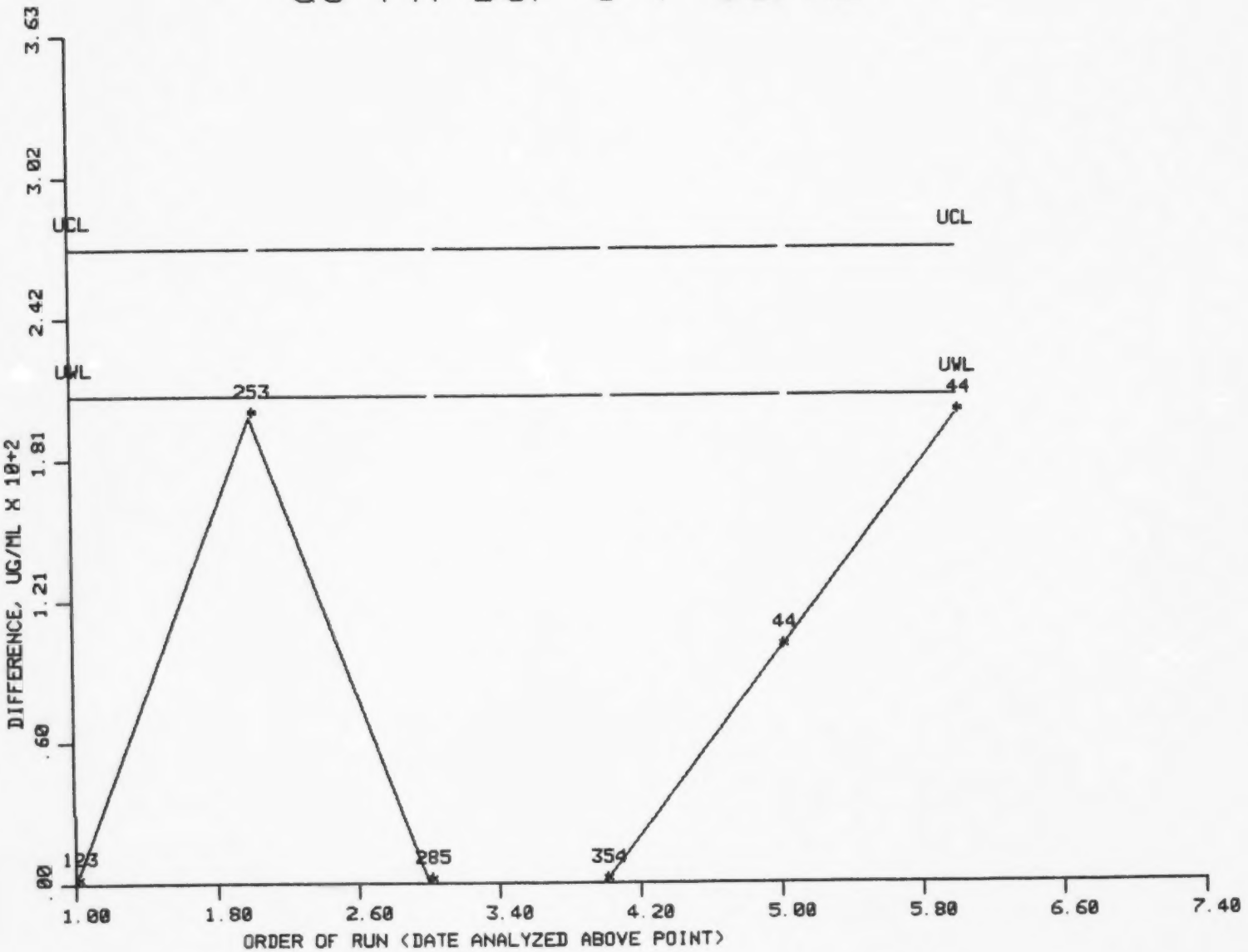
PROJECT EPAAR88 11-OCT-89
UPDATE OF QC CONTROL LIMITS

ANALYTE		CONC'N RANGE UG/ML	# POINTS	UWL UG/ML	UCL UG/ML	PAGE
NO3	DUP	0-.99	38	.0226561	.029516	A38
NO3	DUP	.99-9.84	56	.0469504	.0611665	
NO3	SPK	0-.99	82	.0184087	.0239827	
NO3	SPK	.99-9.84	95	.147601	.192293	
NO3	SPK	9.84-56.6	88	.913114	1.1896	
SO4	DUP	0-.99	15	.0253008	.0329616	A43
SO4	DUP	.99-9.84	80	.0526379	.068576	
SO4	SPK	0-.99	85	.0168495	.0219513	
SO4	SPK	.99-9.84	84	.124287	.161919	
SO4	SPK	9.84-56.6	99	.891922	1.16199	
NA	DUP	0-.0289	11	1.07245E-03	1.39718E-03	A48
NA	DUP	.0289-.192	57	3.29823E-03	4.29690E-03	
NA	DUP	.192-.96	39	7.16316E-03	9.33209E-03	
NA	DUP	.96->.96	6	.0905692	.117993	
NA	SPK	0-.0289	33	1.49839E-03	1.95209E-03	
NA	SPK	.0289-.192	79	4.01918E-03	5.23614E-03	
NA	SPK	.192-.96	113	.020622	.0268661	
NA	SPK	.96->.96	23	.263768	.343634	
K	DUP	0-.0289	56	1.53738E-03	2.00288E-03	A56
K	DUP	.0289-.192	45	2.74984E-03	3.58247E-03	
K	DUP	.192-.96	3	9.11968E-03	.011881	
K	SPK	0-.0289	59	2.05905E-03	2.68251E-03	
K	SPK	.0289-.192	91	5.67095E-03	7.38804E-03	
K	SPK	.192-.96	105	.0378269	.0492805	
K	SPK	.96->.96	12	.342783	.446573	
CA	DUP	0-.0867	31	7.16565E-03	9.33532E-03	A63
CA	DUP	.0867-.576	56	.0116939	.0152347	
CA	DUP	.576-2.87	3	.0378173	.049268	
CA	SPK	0-.0867	47	7.74896E-03	.0100953	
CA	SPK	.0867-.576	101	.0250627	.0326515	
CA	SPK	.576-2.87	127	.0666277	.0868018	
MG	DUP	0-.0144	24	1.20271E-03	1.56688E-03	A69
MG	DUP	.0144-.096	62	2.00800E-03	2.61600E-03	
MG	DUP	.096-.478	10	6.55108E-03	8.53468E-03	
MG	SPK	0-.0144	49	1.24476E-03	1.62165E-03	
MG	SPK	.0144-.096	110	3.48206E-03	4.53639E-03	
MG	SPK	.096-.478	131	.0139506	.0181747	

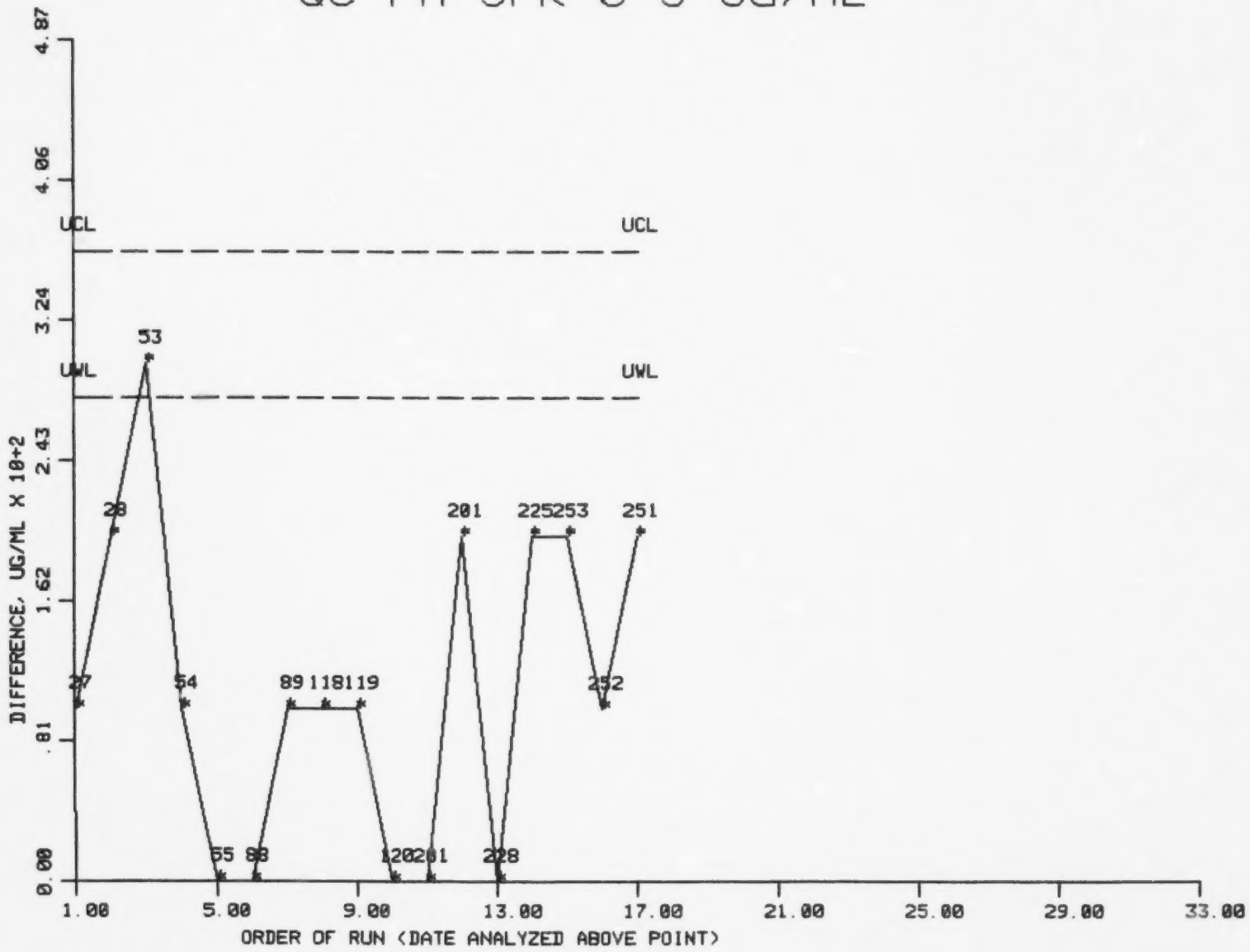
QC PH DUP 0-5 UG/ML



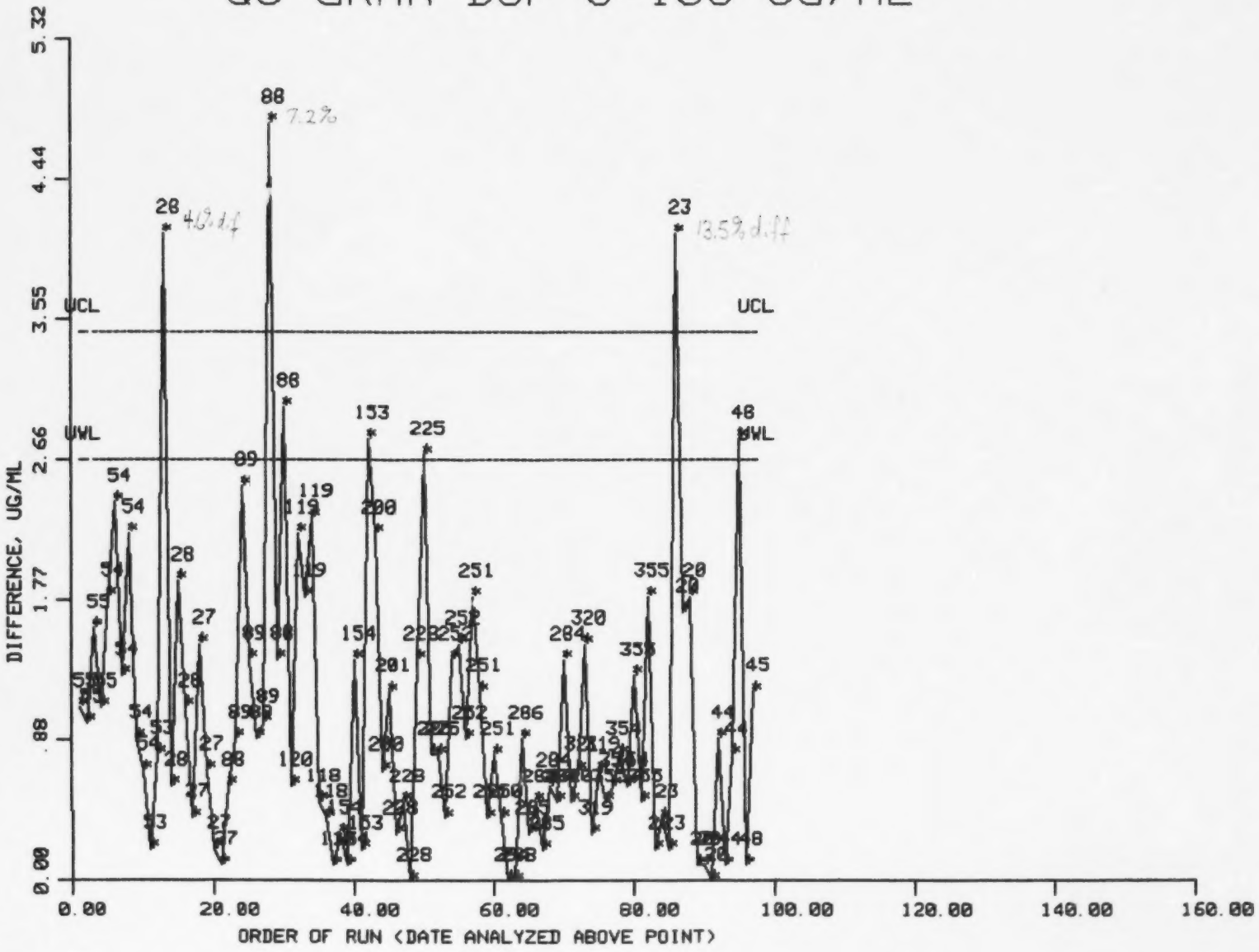
QC PH DUP 5-7 UG/ML



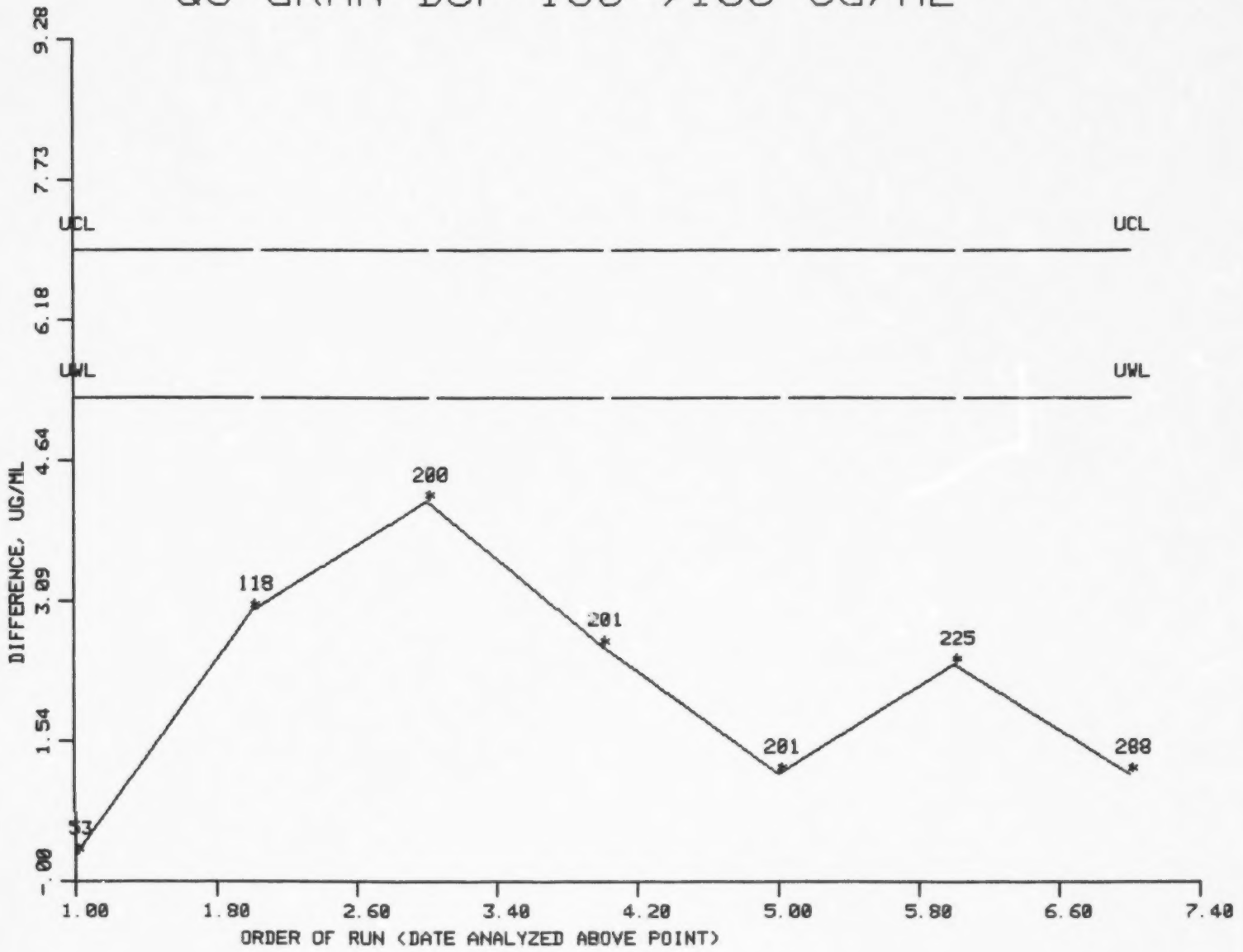
QC PH SPK 0-5 UG/ML



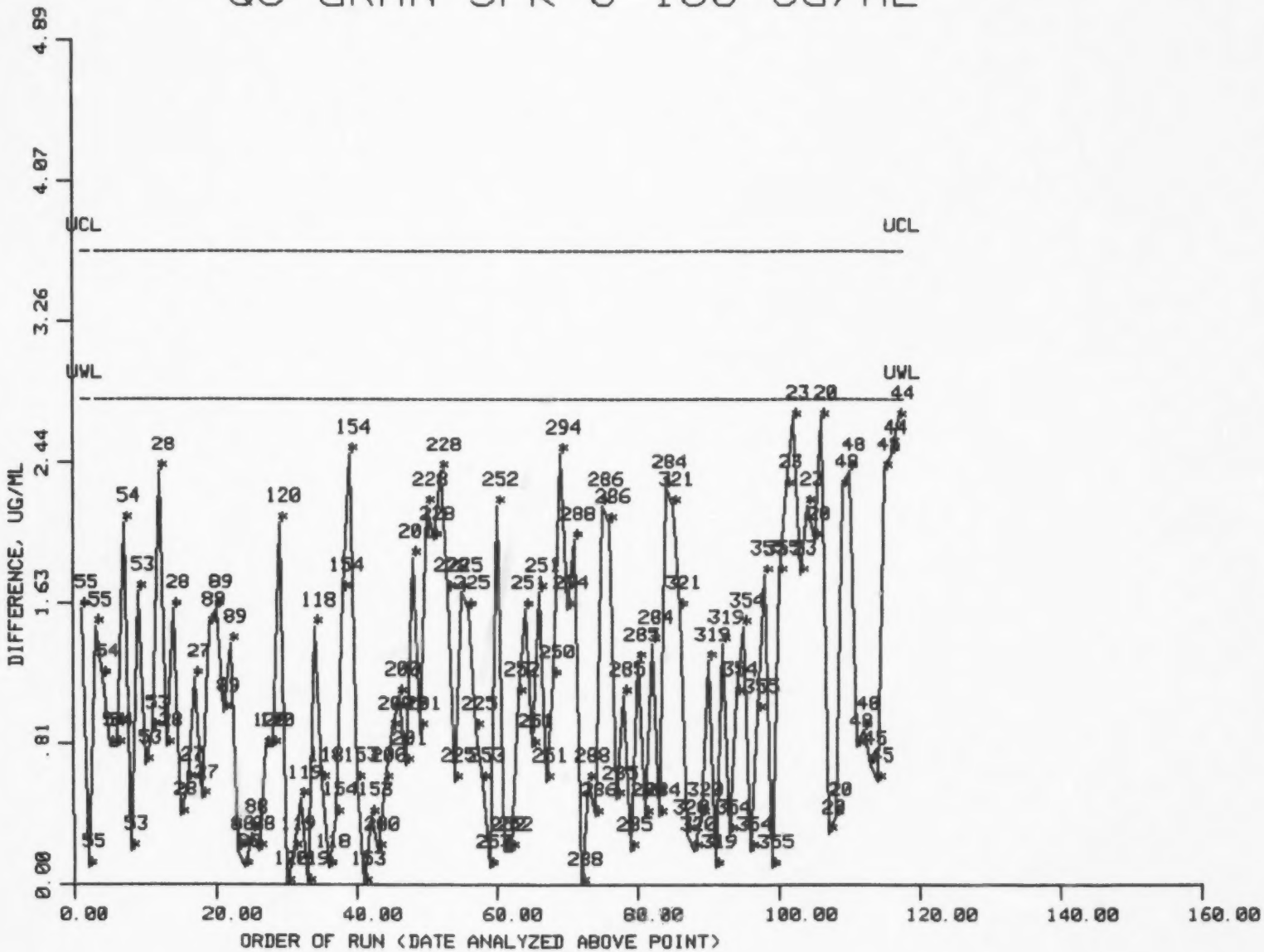
QC GRAN DUP 0-100 UG/ML

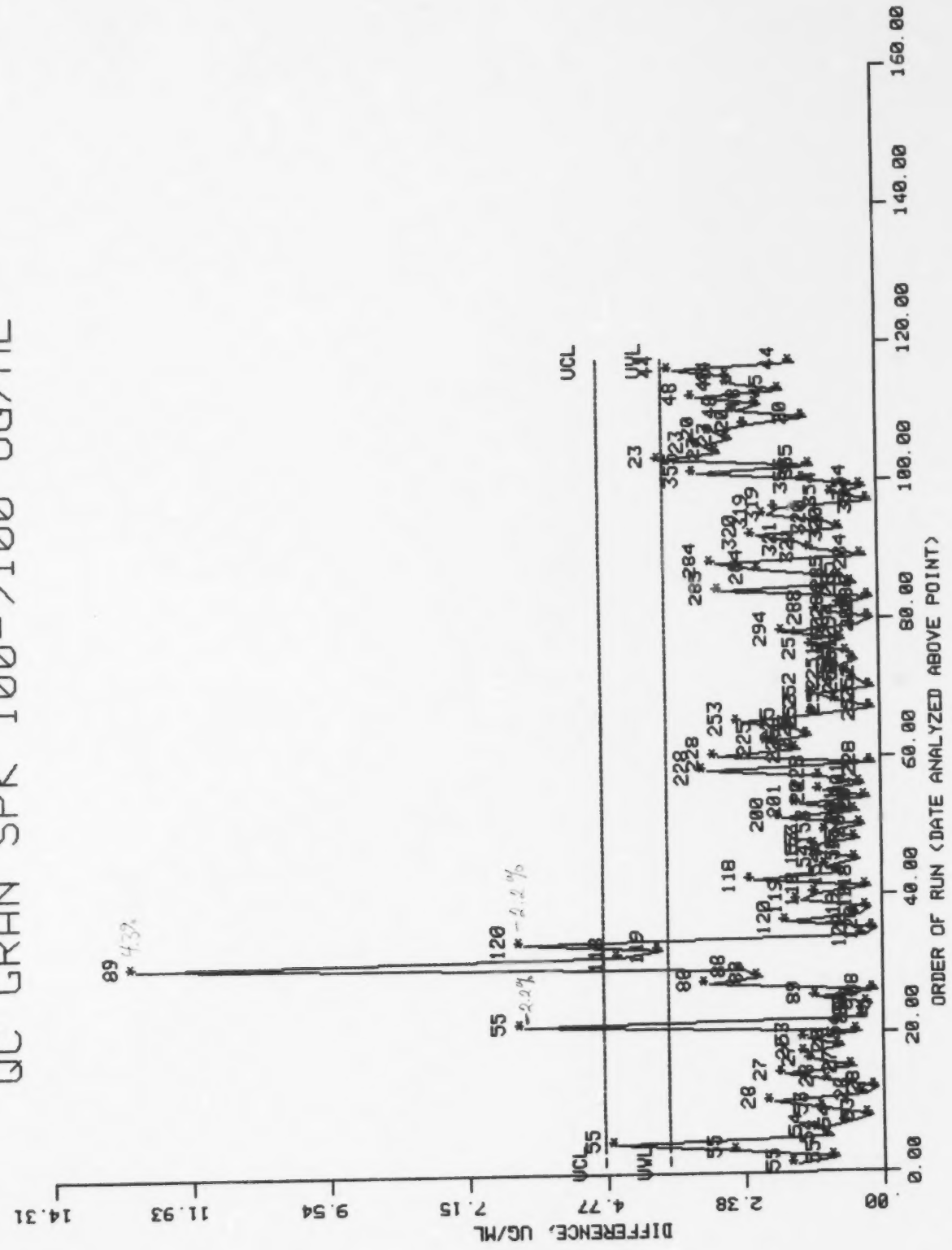


QC GRAN DUP 100->100 UG/ML

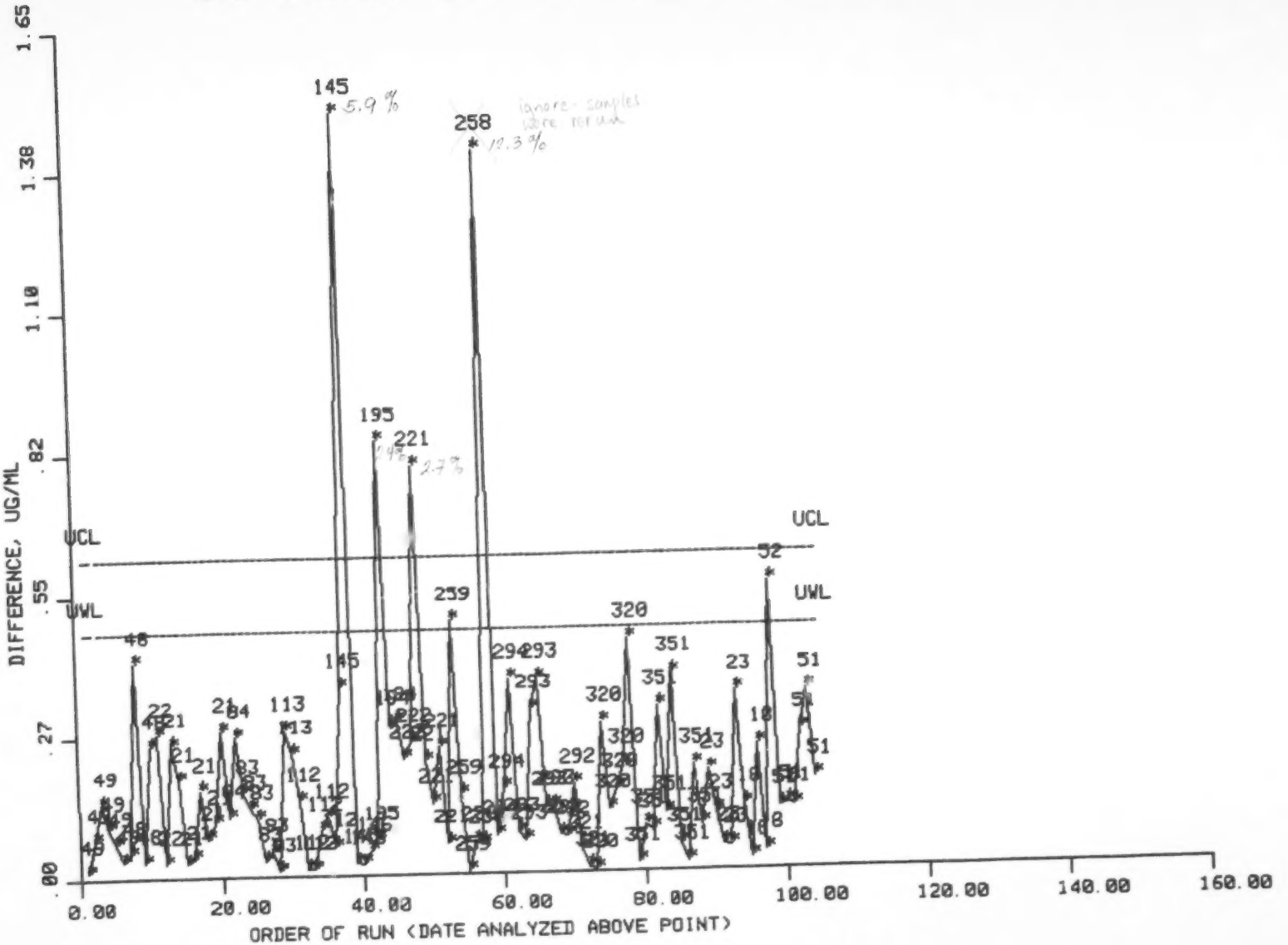


QC GRAN SPK 0-100 UG/ML



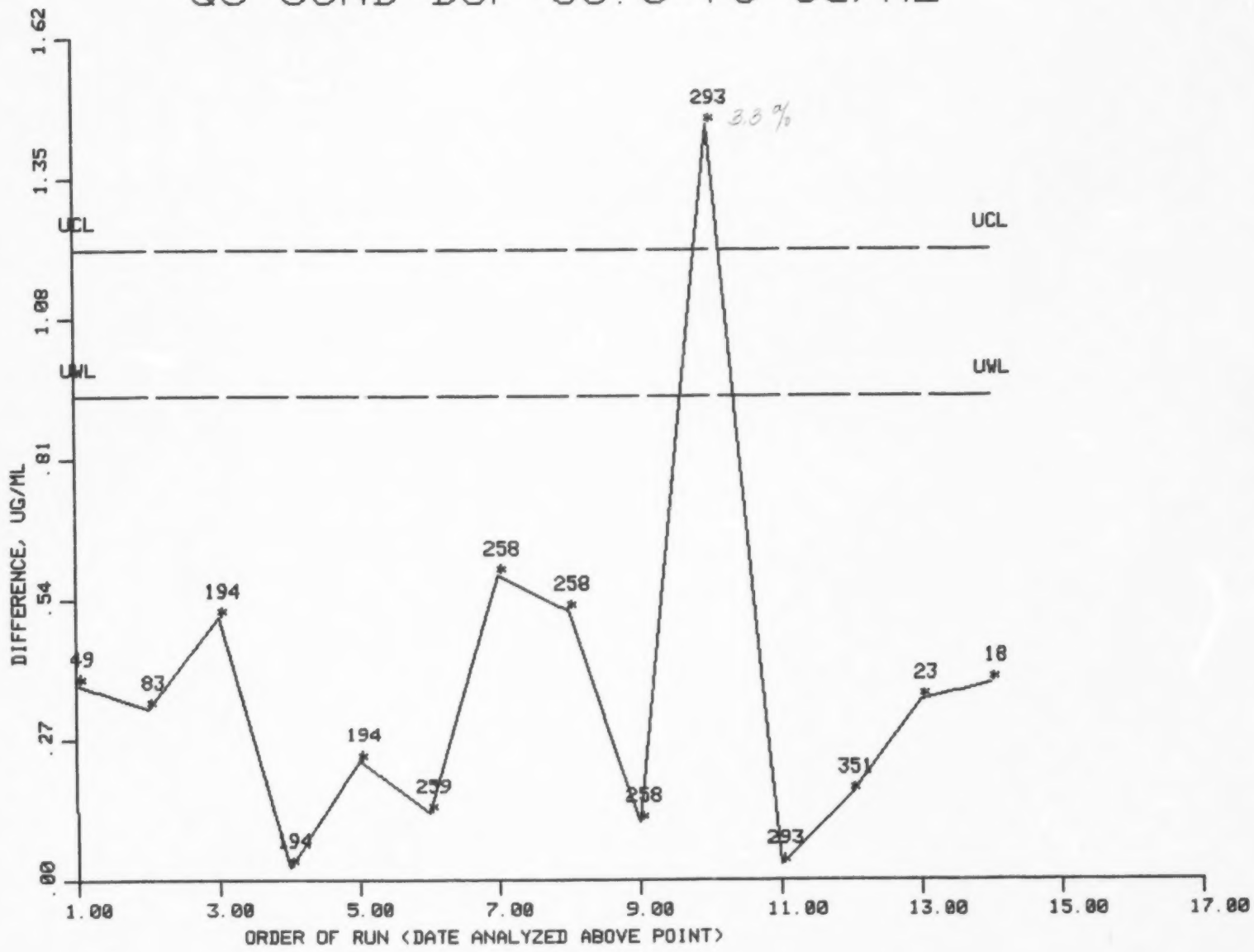

QC GRAN SPK 100->100 UG/ML
DIFFERENCE, UG/ML
14.31
11.93
9.54
7.15
4.77
2.38
.00
UCL
UWL
LWL
LCL
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

QC COND DUP 0-36.8 UG/ML

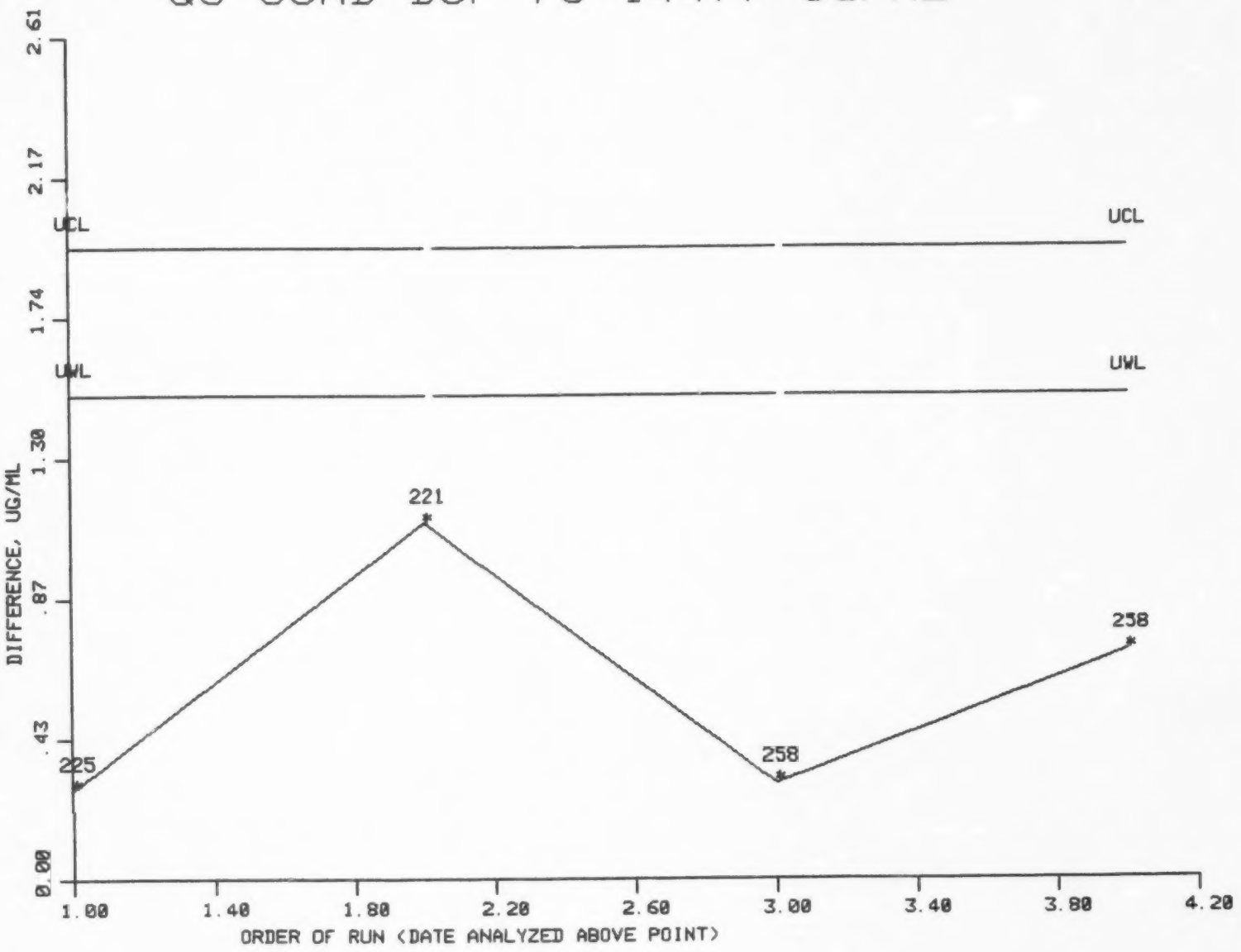


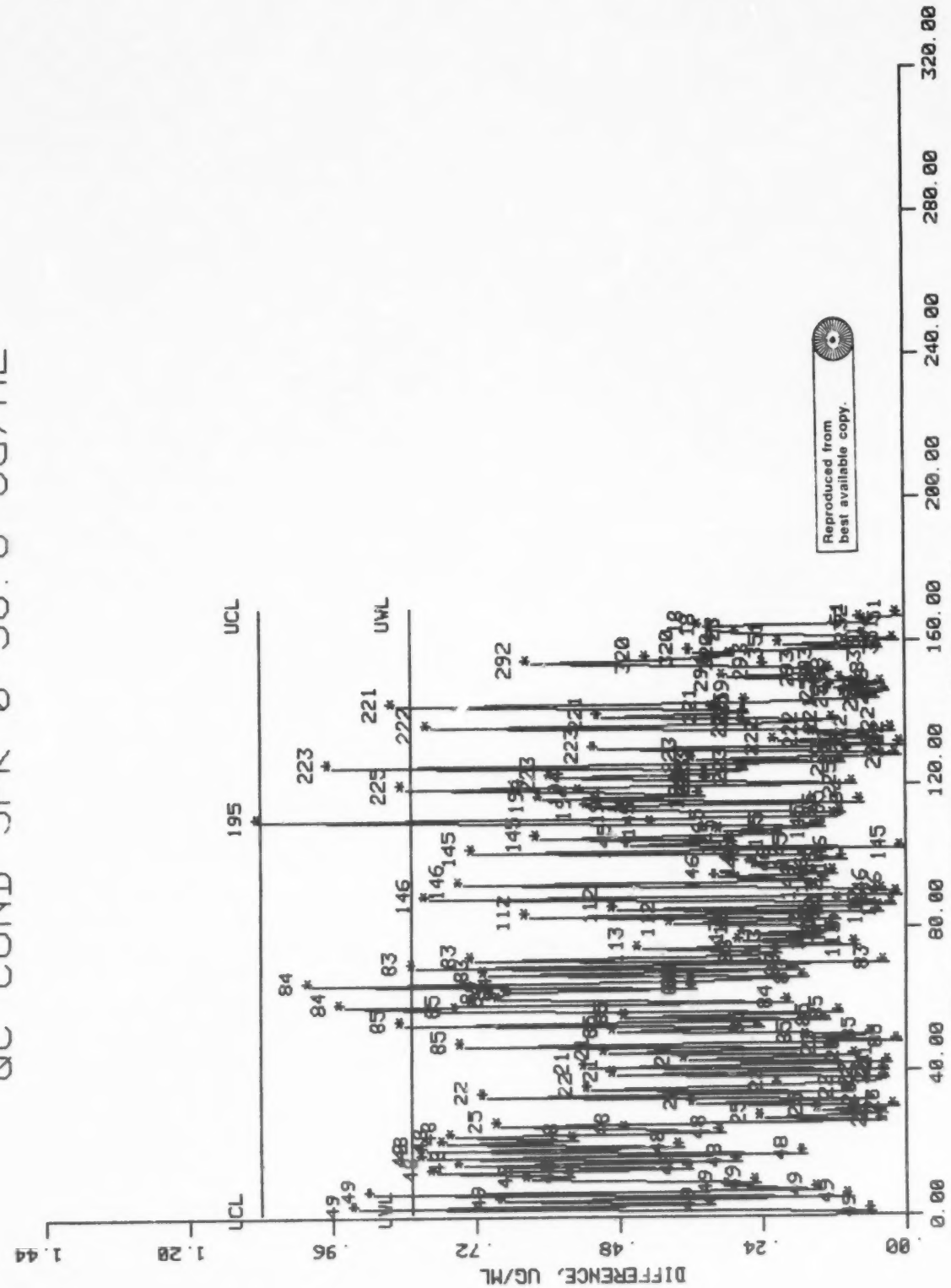
A11

QC COND DUP 36.8-75 UG/ML

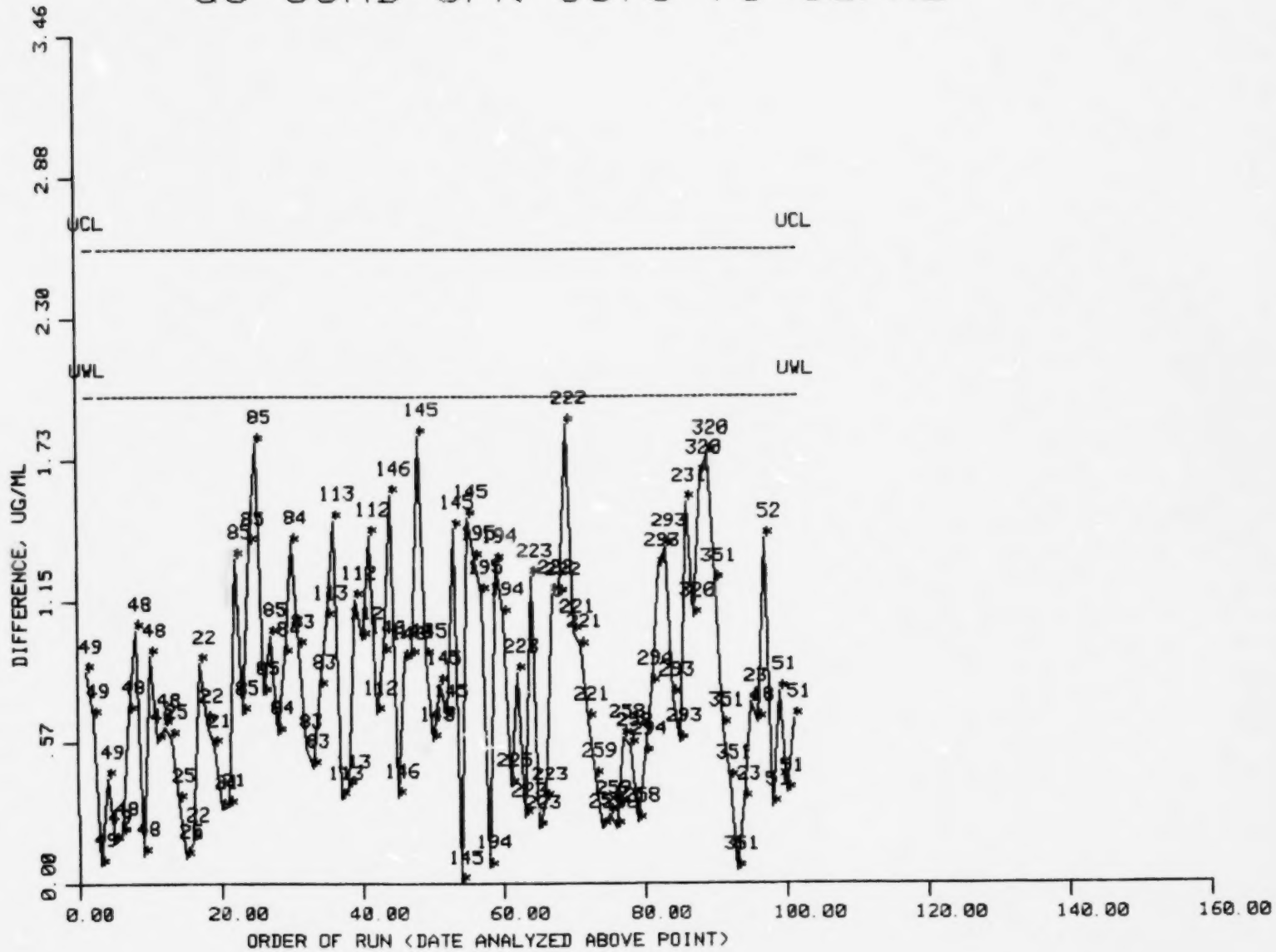


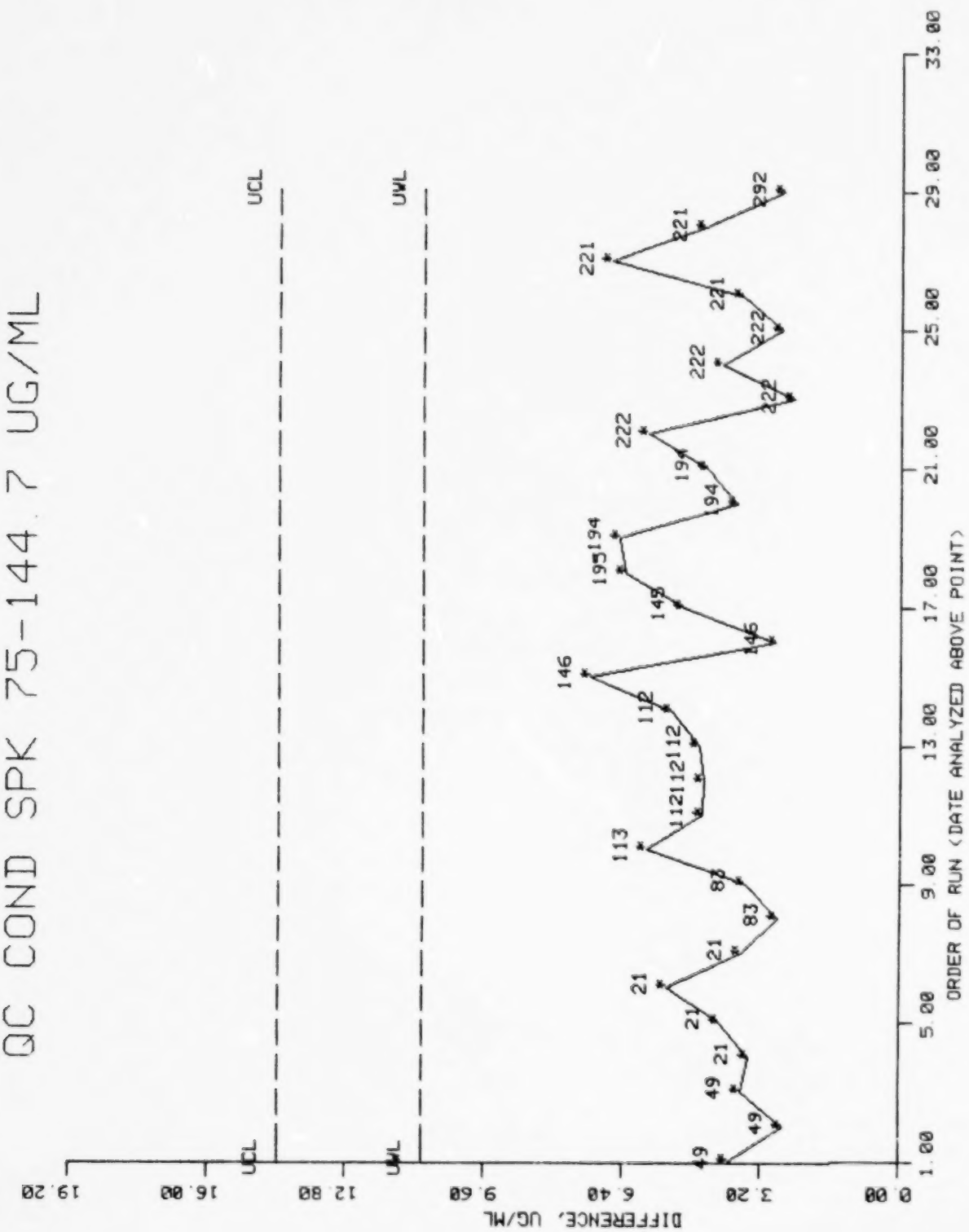
QC COND DUP 75-144.7 UG/ML

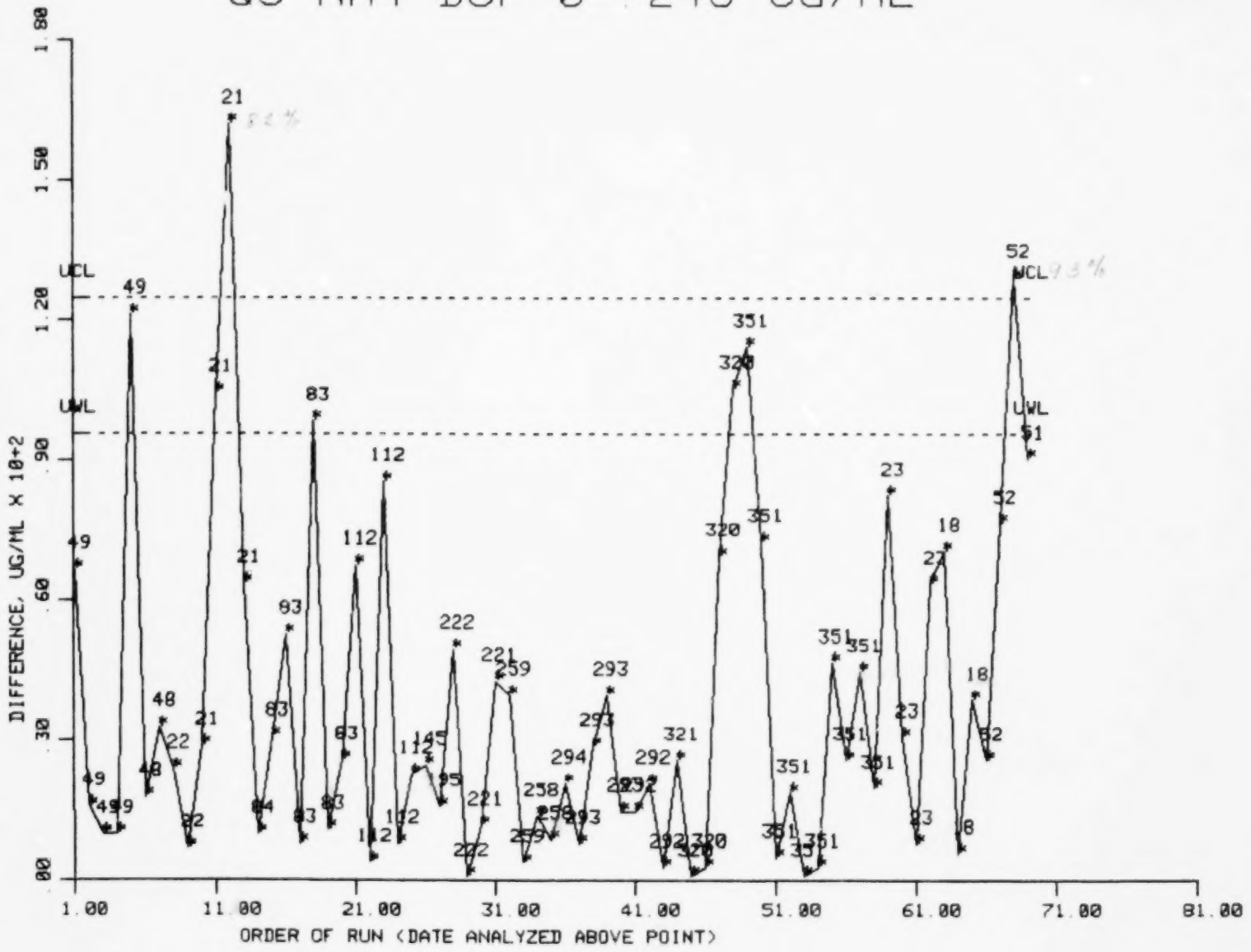


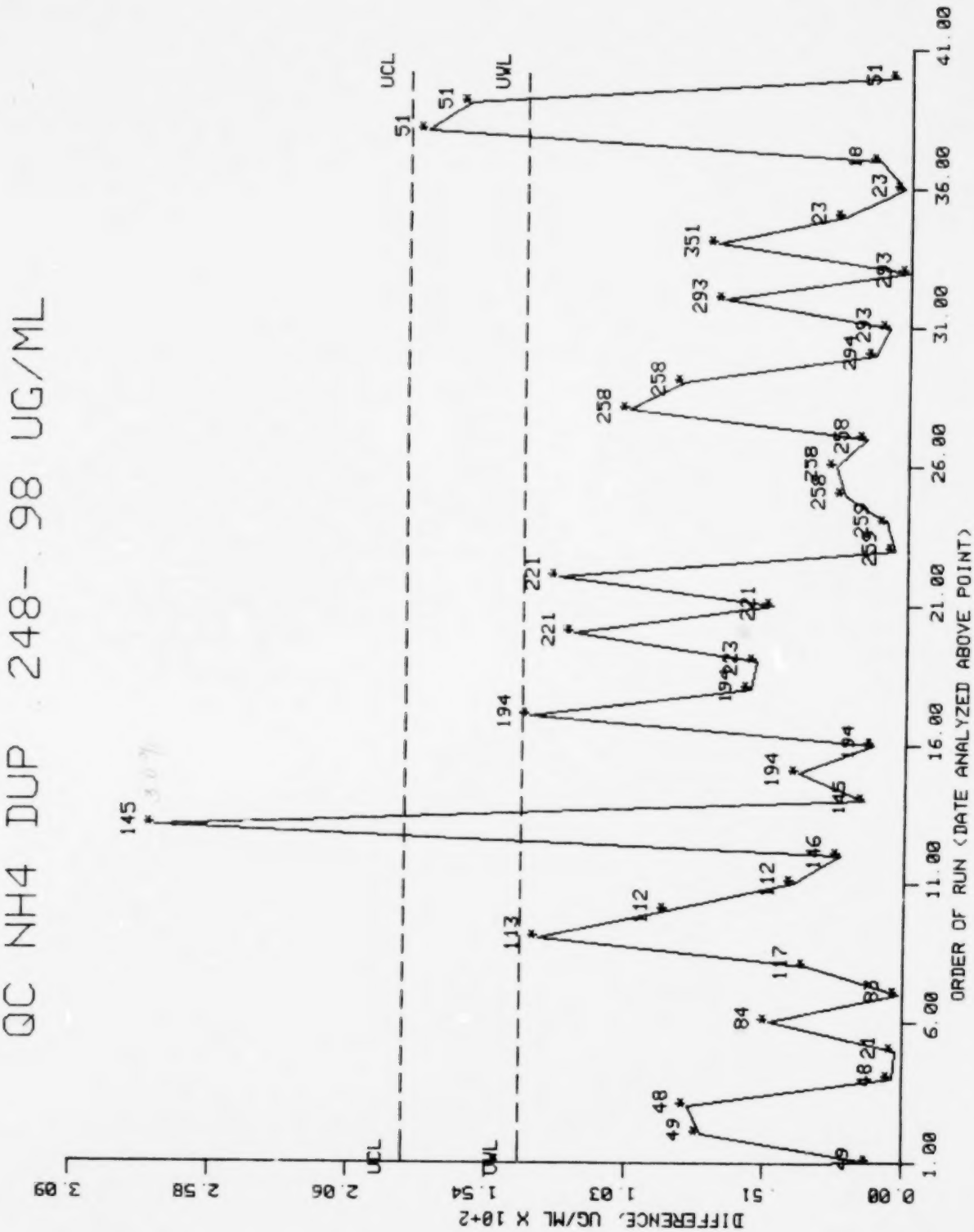

QC COND SPK 0-36.8 UG/ML
DIFFERENCE, UG/ML
1.44
1.20
.96
.72
.48
.24
.00
UCL
UWL
UCL
UWL
0.00
40.00
80.00
120.00
160.00
200.00
240.00
280.00
320.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)
Reproduced from best available copy.

QC COND SPK 36.8-75 UG/ML

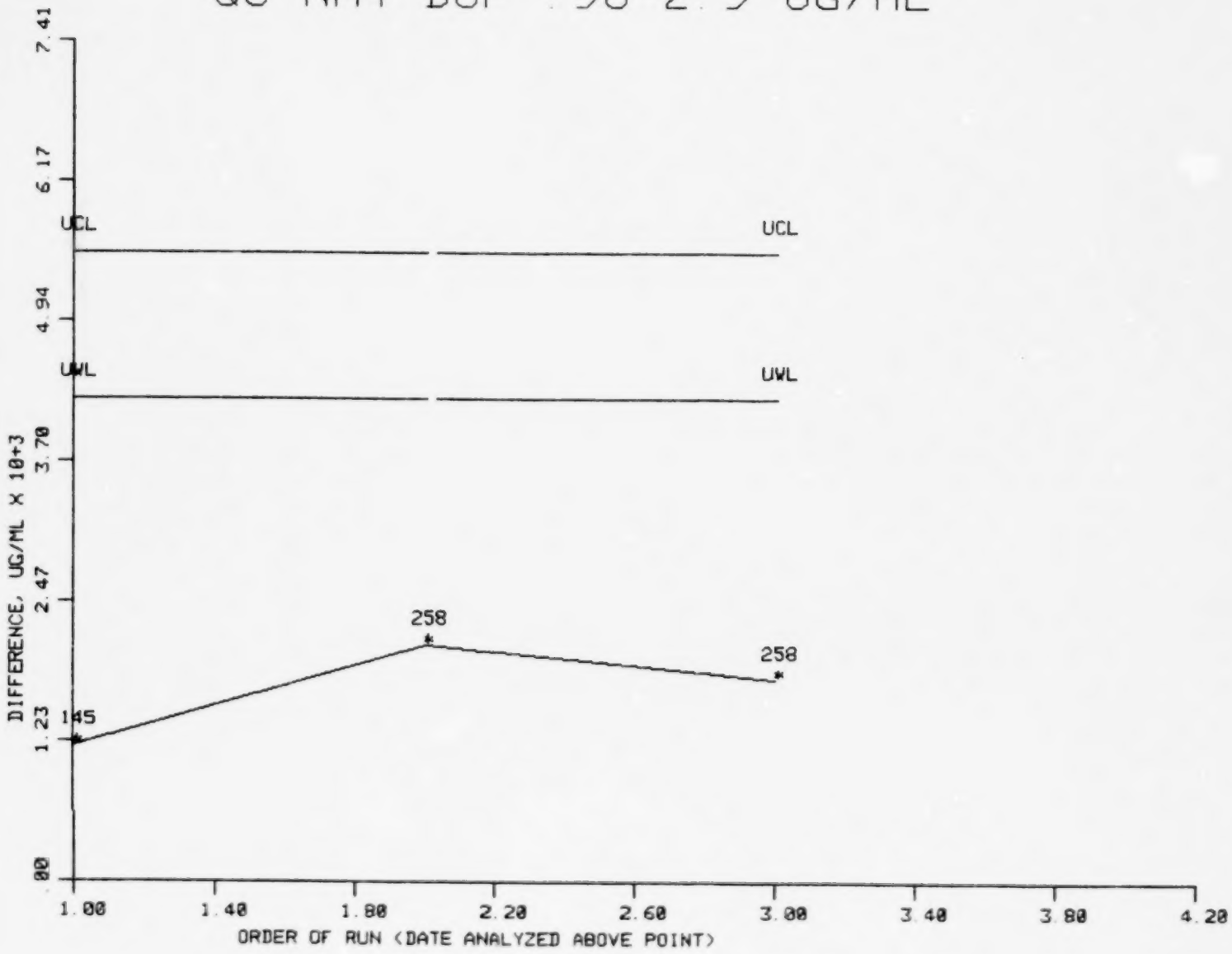



QC COND SPK 75-144.7 UG/ML
UCL
UWL
DIFFERENCE, UG/ML
0.00
3.20
6.40
9.60
12.80
16.00
19.20
1.00
5.00
9.00
13.00
17.00
21.00
25.00
29.00
33.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

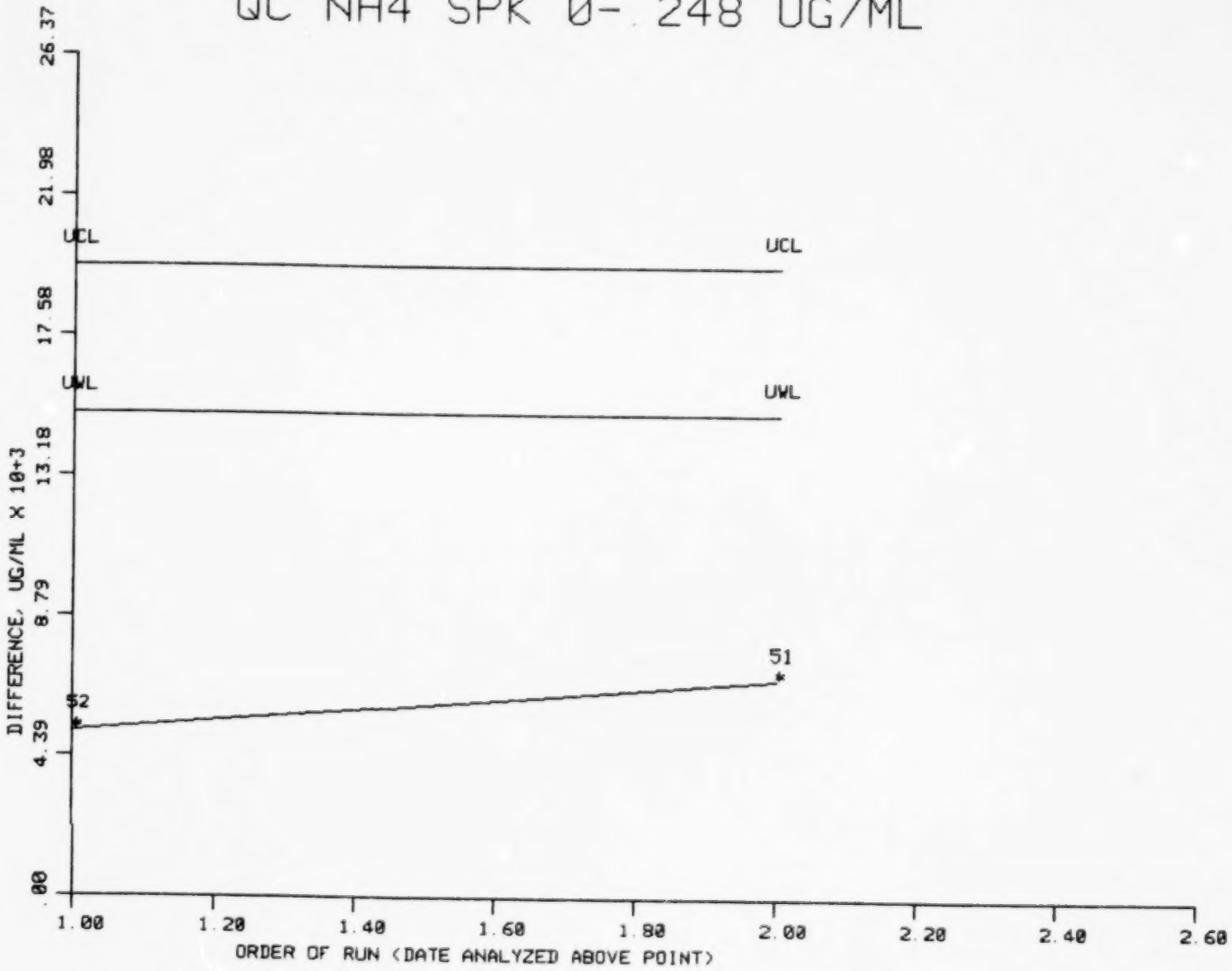

QC NH4 DUP 0- 248 UG/ML
DIFFERENCE, UG/ML X 10+2
ORDER OF RUN (DATE ANALYZED ABOVE POINT)
UCL
UWL
1.00
11.00
21.00
31.00
41.00
51.00
61.00
71.00
81.00

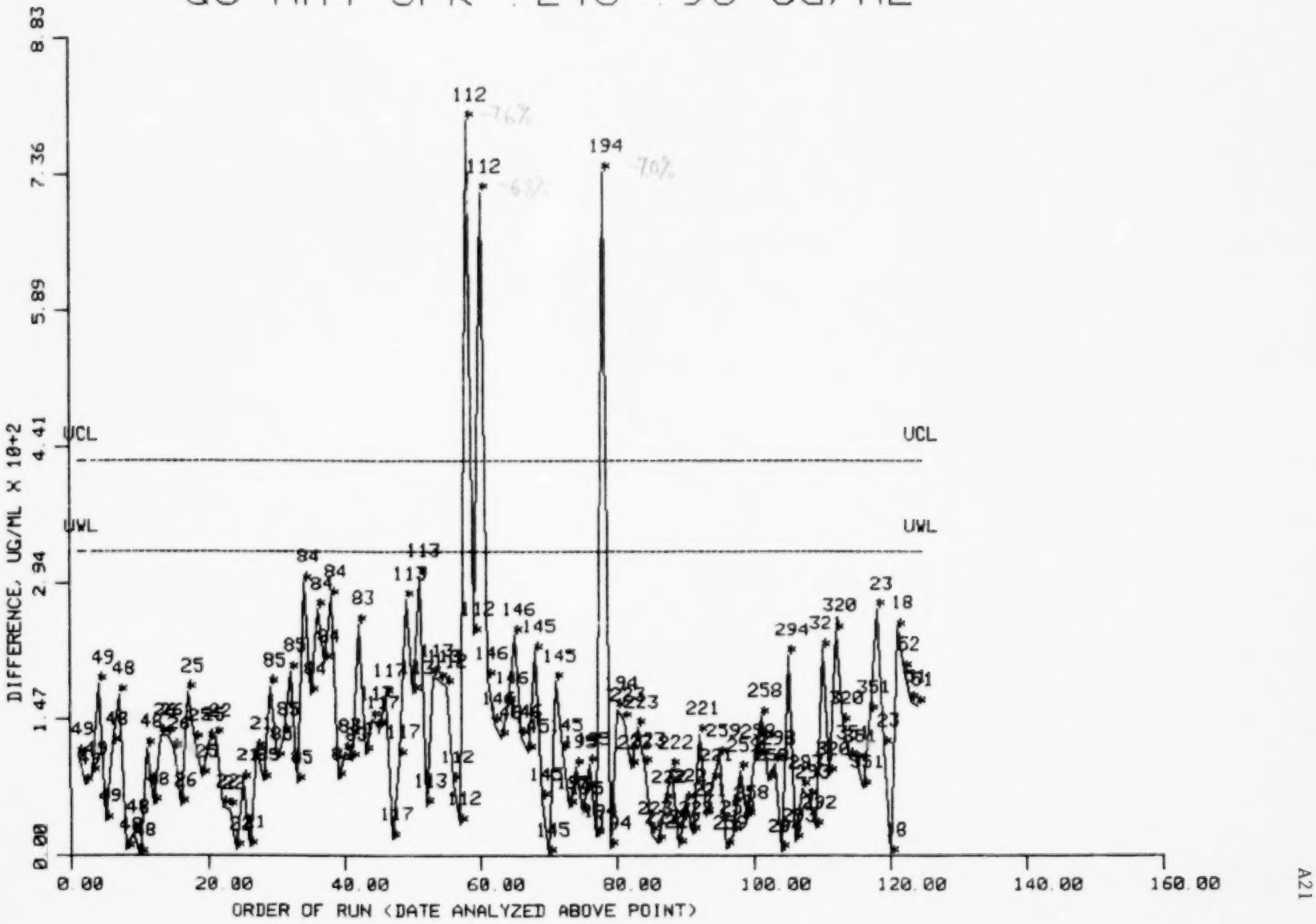

QC NH4 DUP 248- 98 UG/ML
DIFFERENCE, UG/ML X 10+2
ORDER OF RUN (DATE ANALYZED ABOVE POINT)
UCL
UWL
LCL
LWL
0.00
.51
1.03
1.54
2.06
2.58
3.09
1.00
6.00
11.00
16.00
21.00
26.00
31.00
36.00
41.00

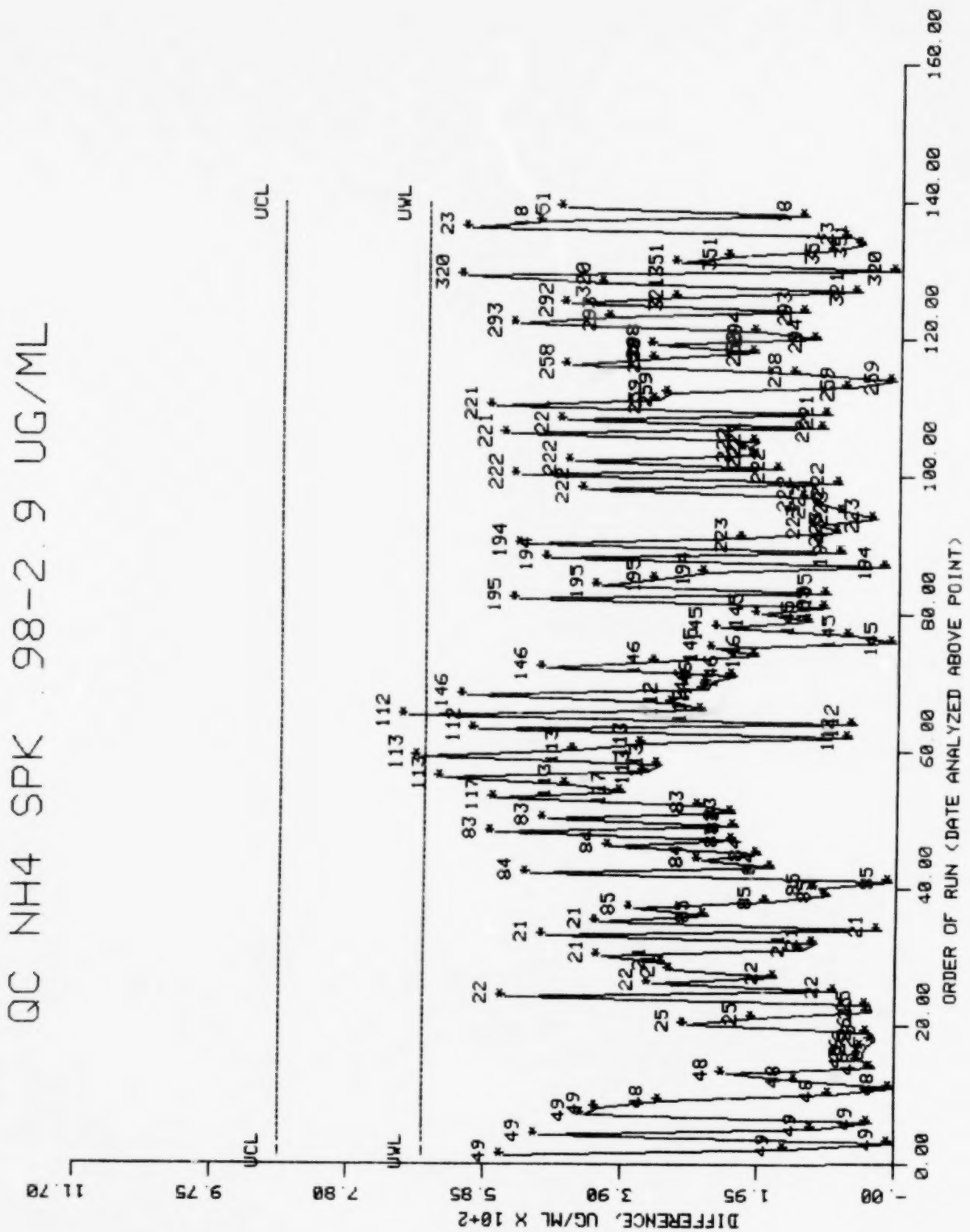
QC NH4 DUP 98-2 9 UG/ML



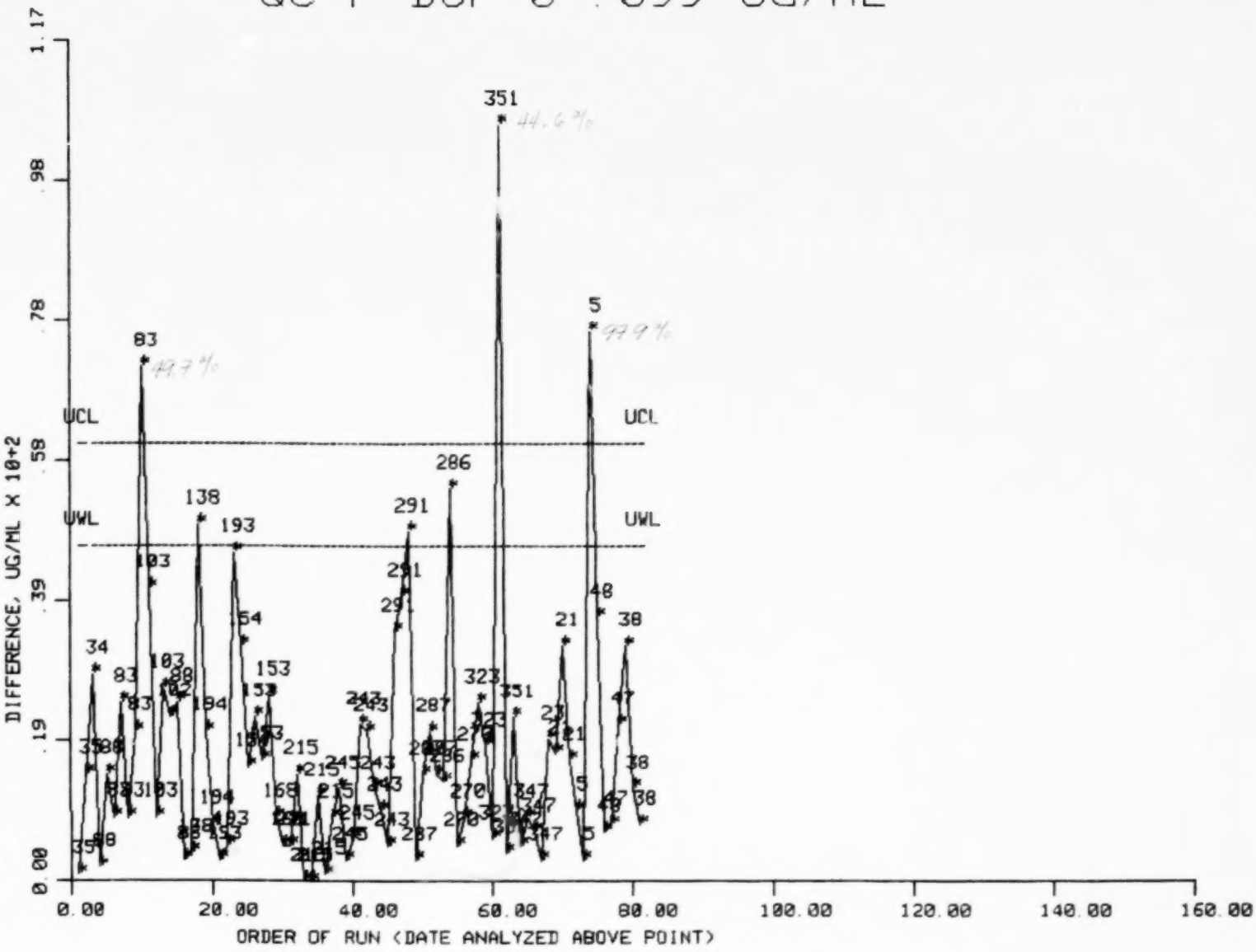
QC NH4 SPK 0- 248 UG/ML



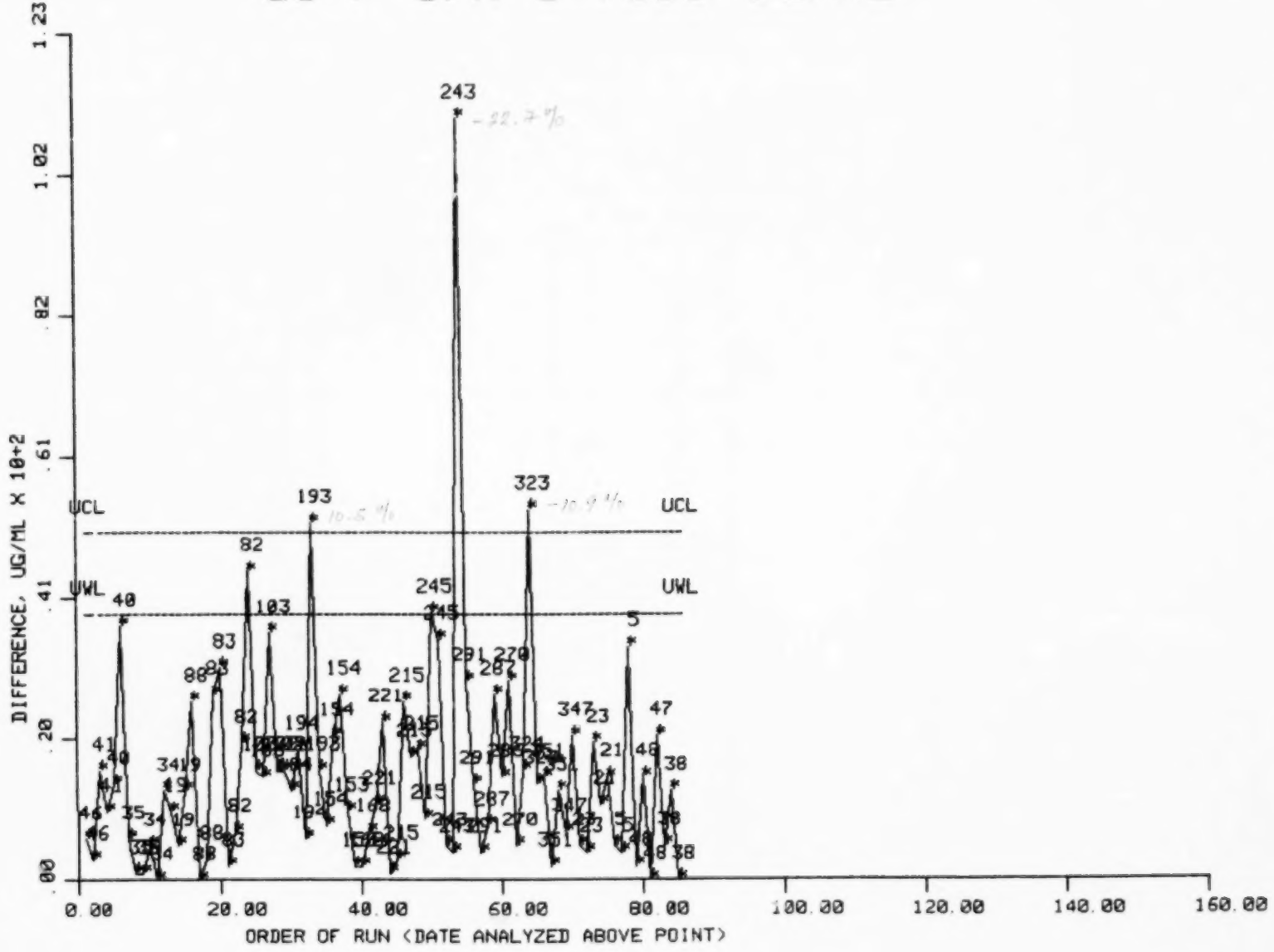

QC NH4 SPK .248- .98 UG/ML
DIFFERENCE, UG/ML X 10+2
0.00
1.47
2.94
4.41
5.89
7.36
8.83
UCL
UWL
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)


QC NH4 SPK 98-2 9 UG/ML
UCL
UWL
UCL
UWL
DIFFERENCE, UG/ML X 10+2
11.70
9.75
7.80
5.85
3.90
1.95
.00
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

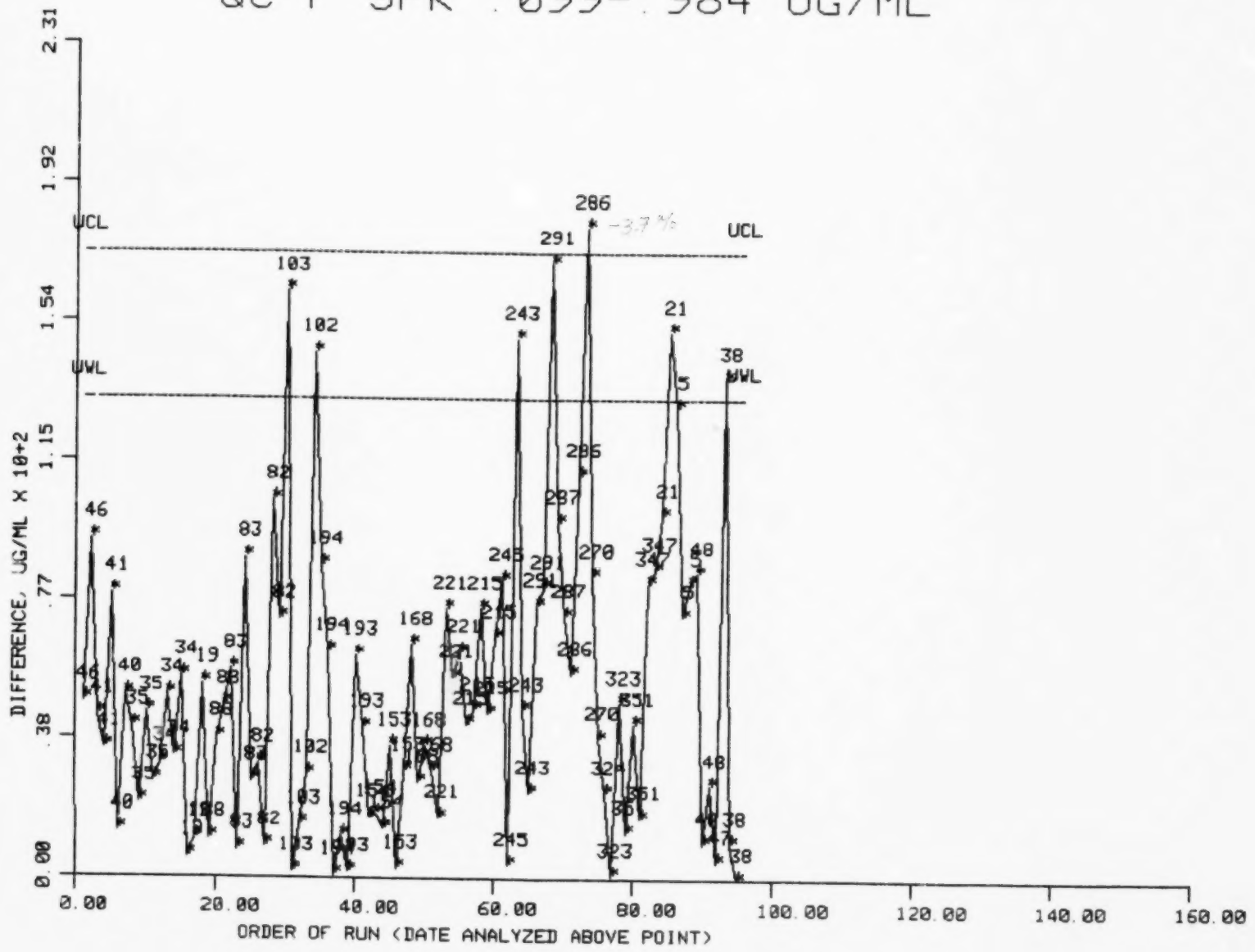
QC F DUP 0-.099 UG/ML

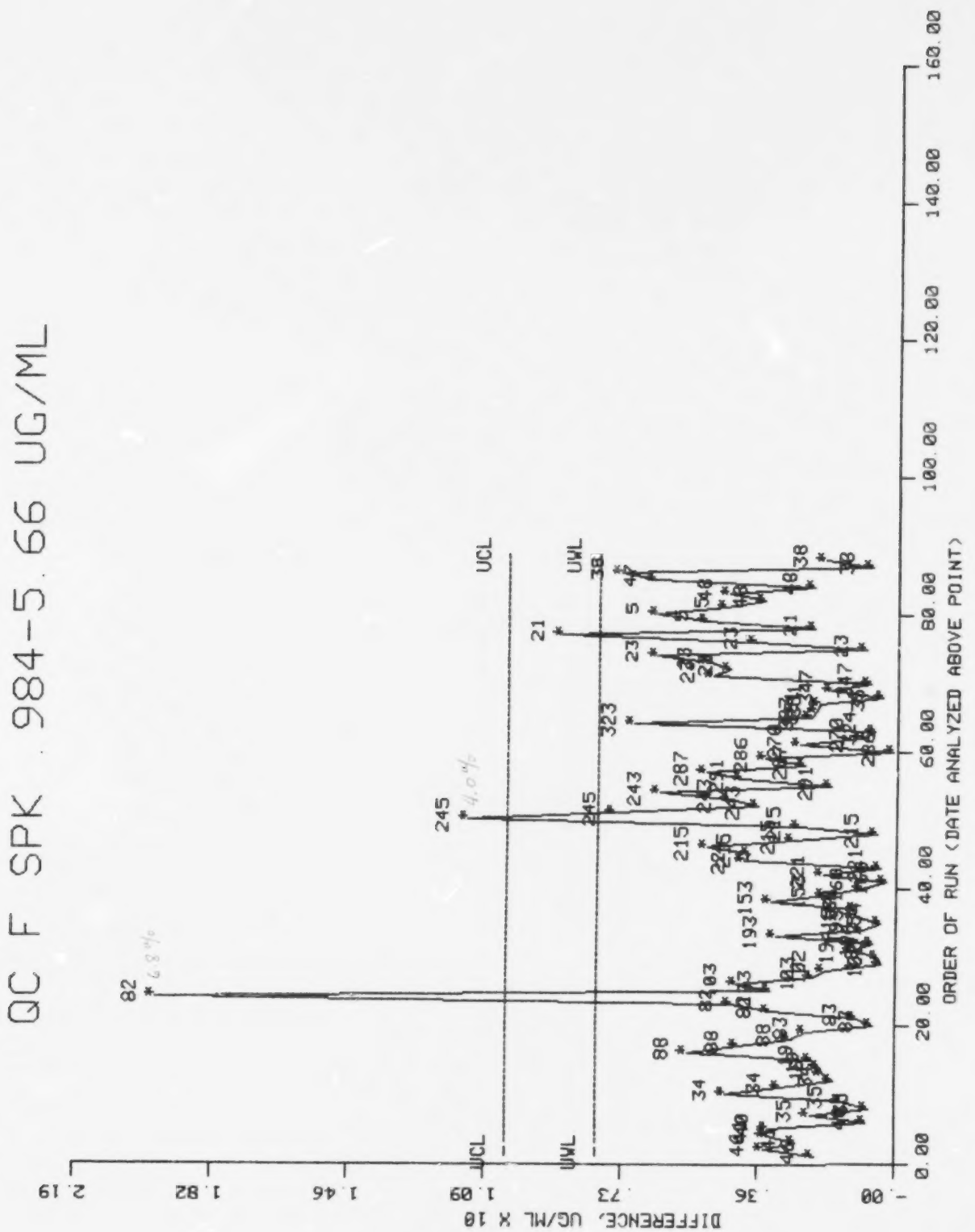


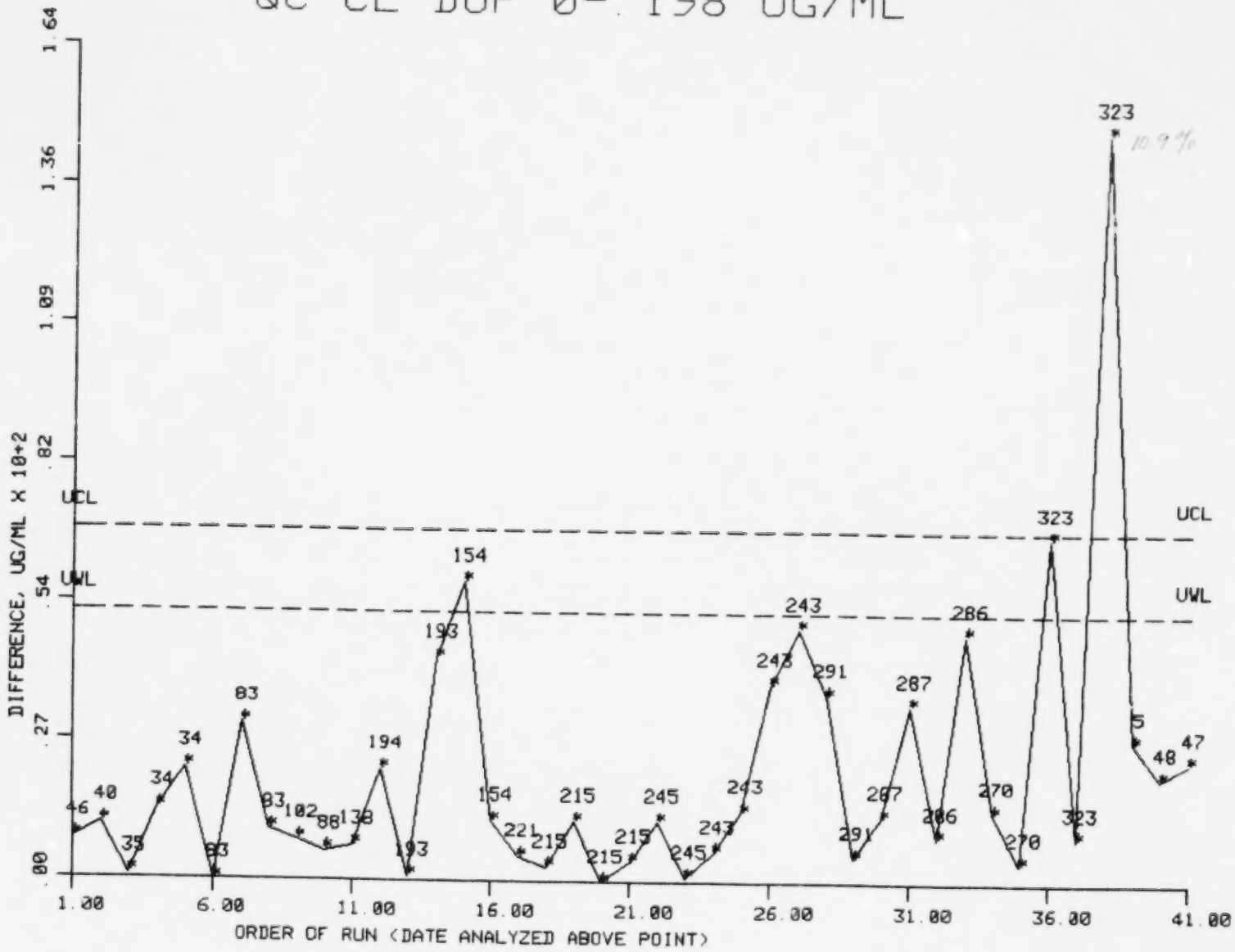
QC F SPK 0-.099 UG/ML

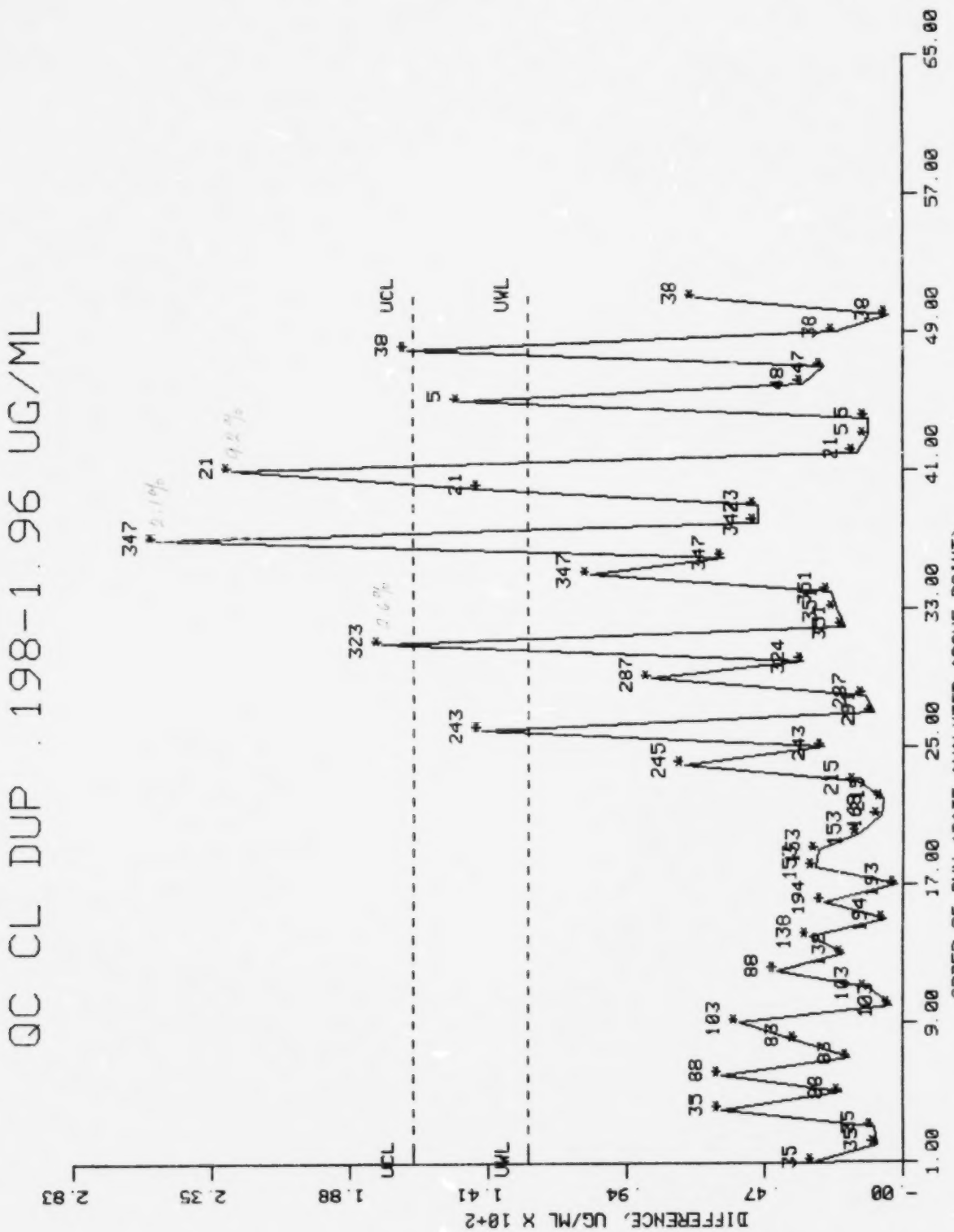


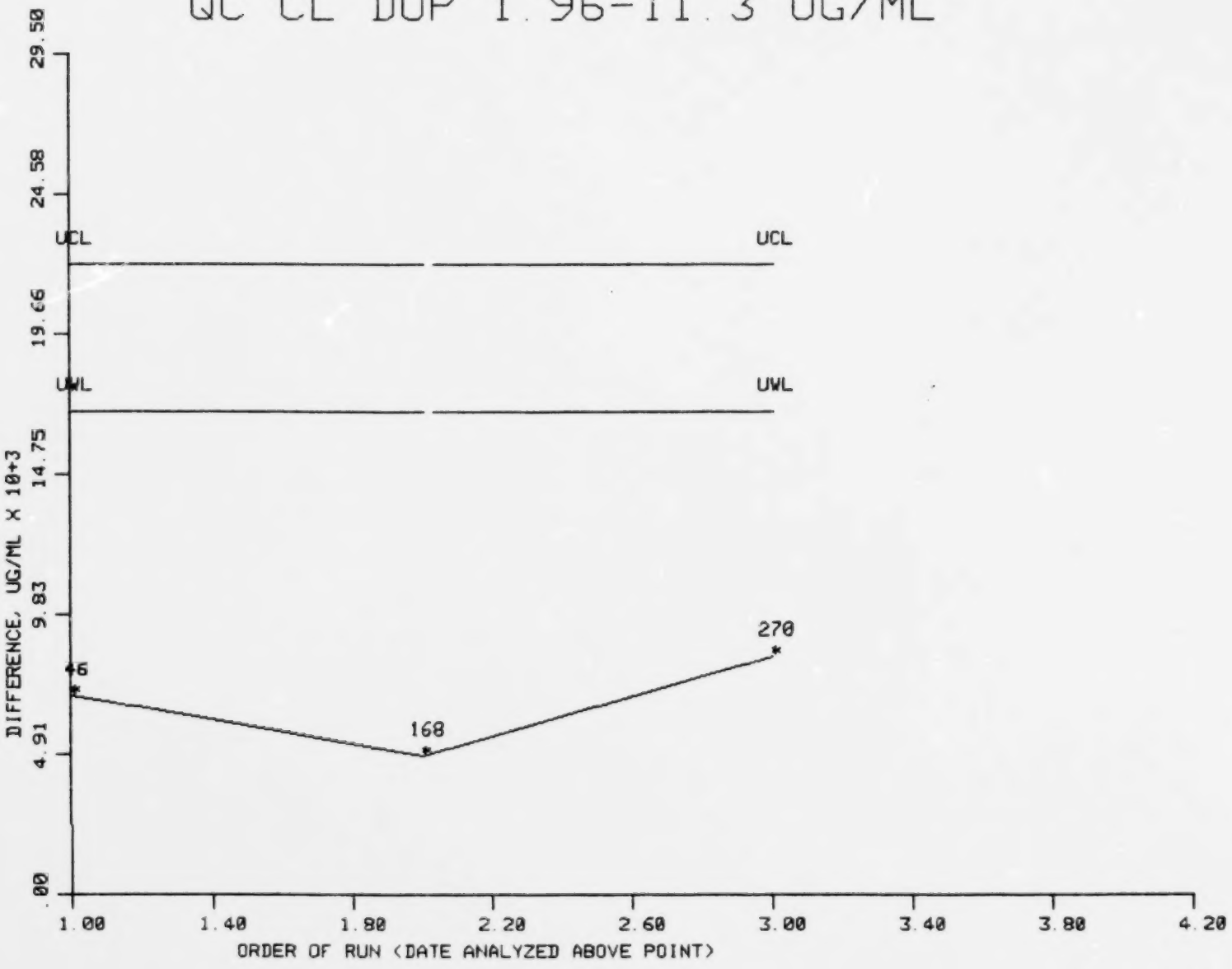
QC F SPK .099-.984 UG/ML

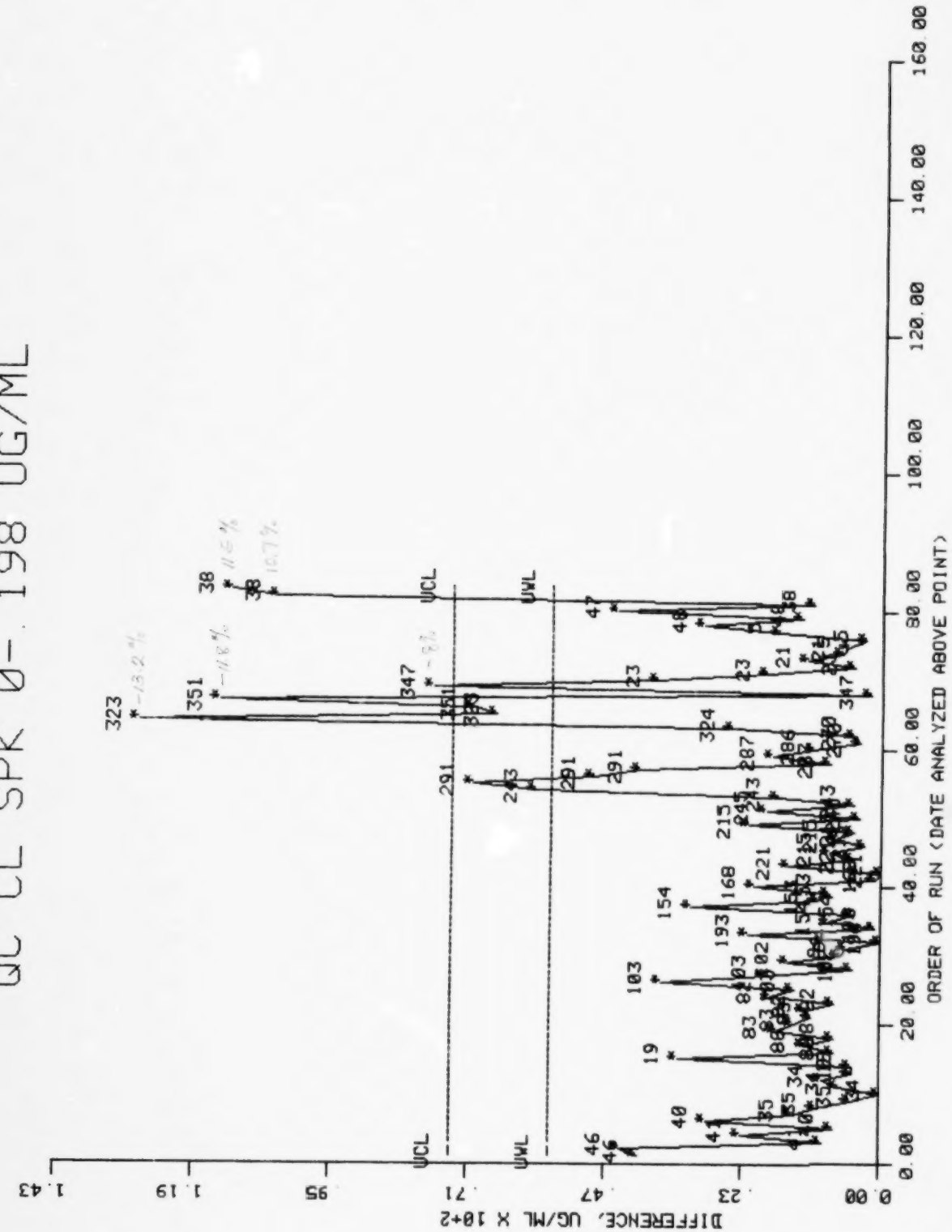


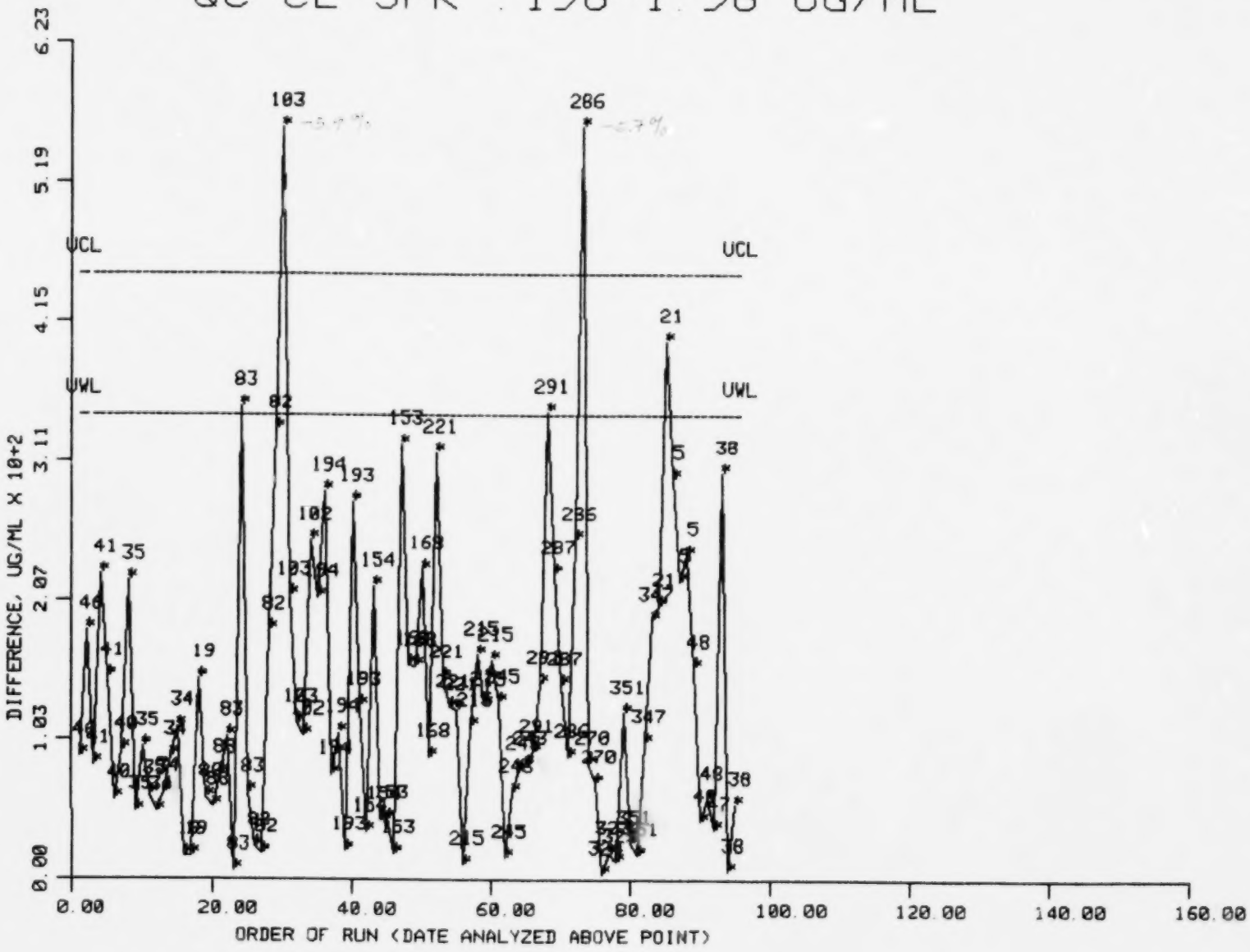

QC F SPK 984-5.66 UG/ML
DIFFERENCE, UG/ML X 10
ORDER OF RUN (DATE ANALYZED ABOVE POINT)
UCL
UWL
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
.00
.36
.73
1.09
1.46
1.82
2.19


QC CL DUP 0-.198 UG/ML
DIFFERENCE, UG/ML X 10+2
.00
.27
.54
.82
1.09
1.36
1.64
UCL
UWL
1.00
6.00
11.00
16.00
21.00
26.00
31.00
36.00
41.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)
46
40
35
34
34
83
83
83
102
88
138
194
193
154
193
154
221
215
215
215
245
245
243
243
291
291
287
287
286
270
270
323
323
323
5
48
47
10.9%

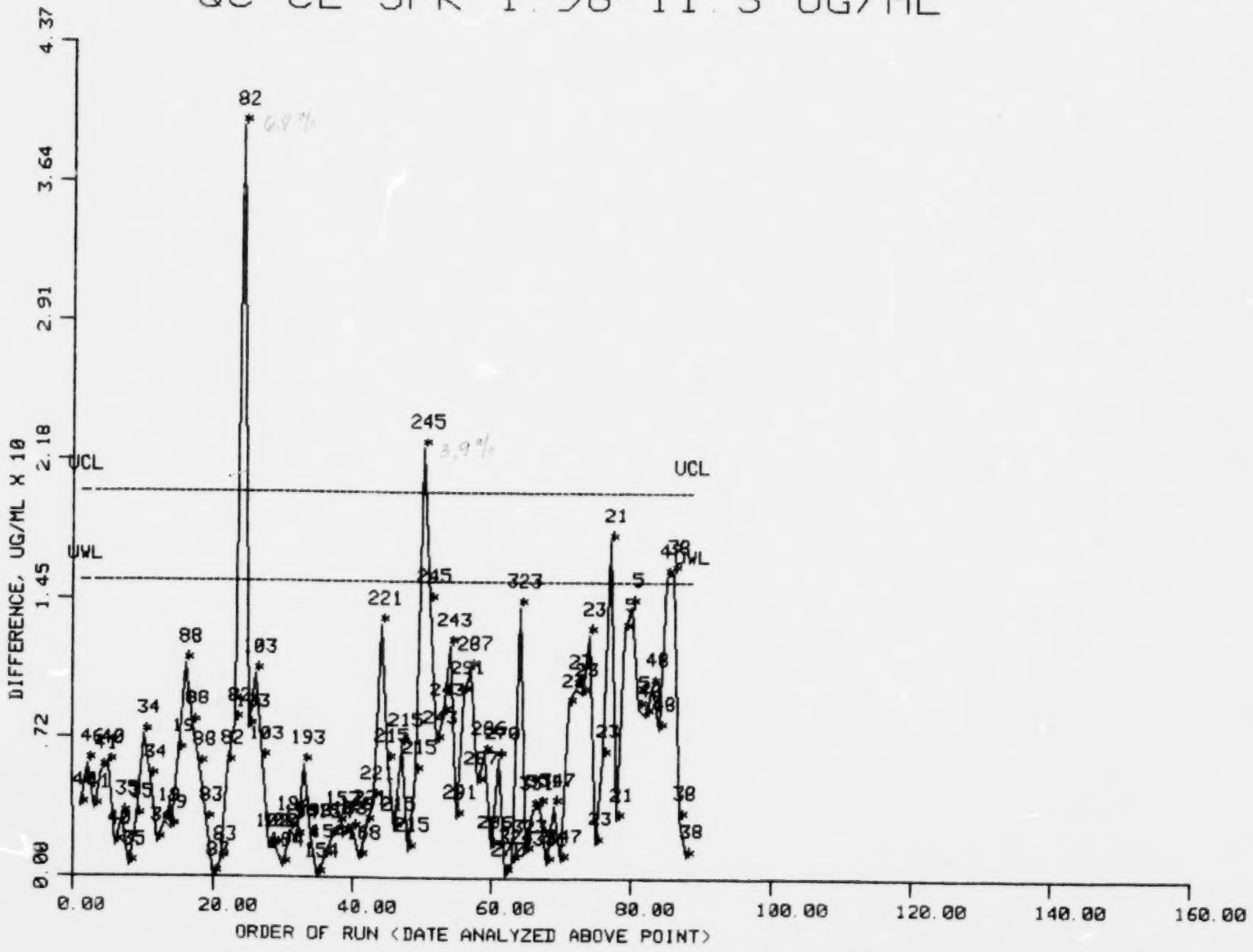

QC CL DUP . 198-1.96 UG/ML
DIFFERENCE, UG/ML X 10+2
2.83
2.35
1.88
1.41
.94
.47
.00
UCL
UWL
1.00
9.00
17.00
25.00
33.00
41.00
49.00
57.00
65.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)


QC CL DUP 1.96-11.3 UG/ML
29.50
24.58
19.66
14.75
9.83
4.91
.00
DIFFERENCE, UG/ML X 10+3
UCL
UCL
UWL
UWL
6
168
270
1.00
1.40
1.80
2.20
2.60
3.00
3.40
3.80
4.20
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

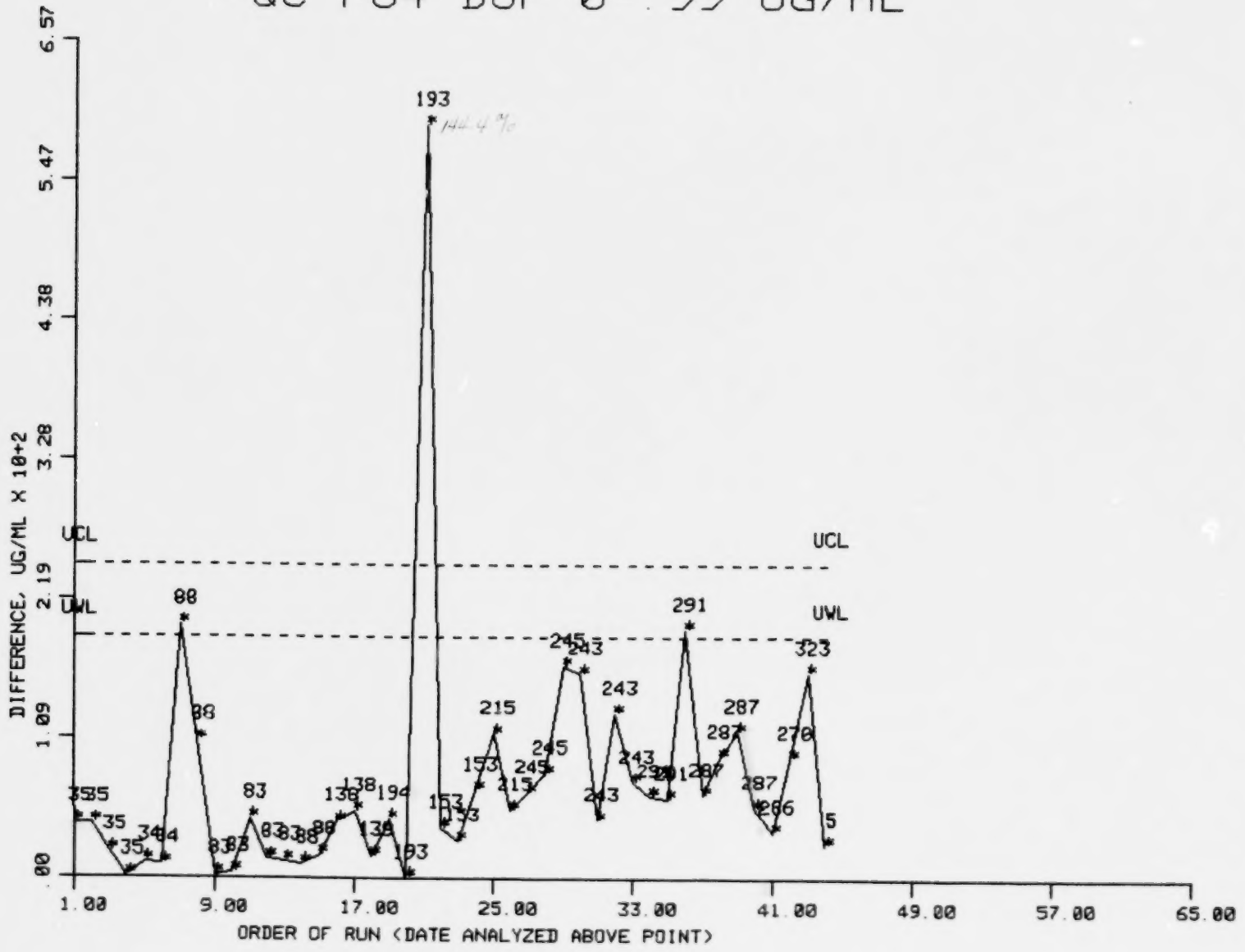

QC CL SPK 0- 198 UG/ML
DIFFERENCE, UG/ML X 10+2
1.43
1.19
95
71
47
23
0.00
UCL
LWL
ORDER OF RUN (DATE ANALYZED ABOVE POINT)
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00


QC CL SPK . 198-1 96 UG/ML
DIFFERENCE, UG/ML X 10+2
6.23
5.19
4.15
3.11
2.07
1.03
0.00
UCL
UCL
UWL
UWL
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

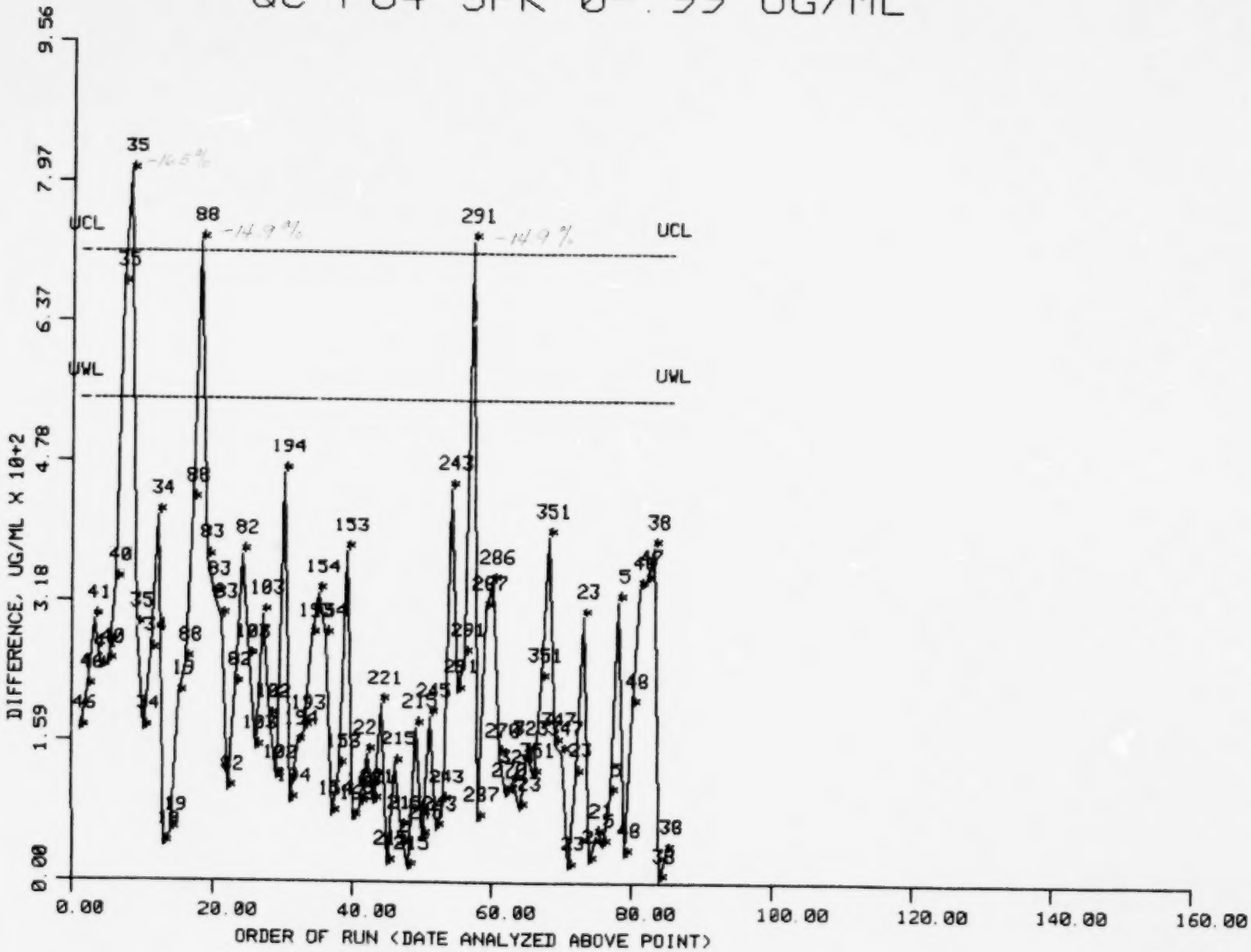
QC CL SPK 1.96-11.3 UG/ML

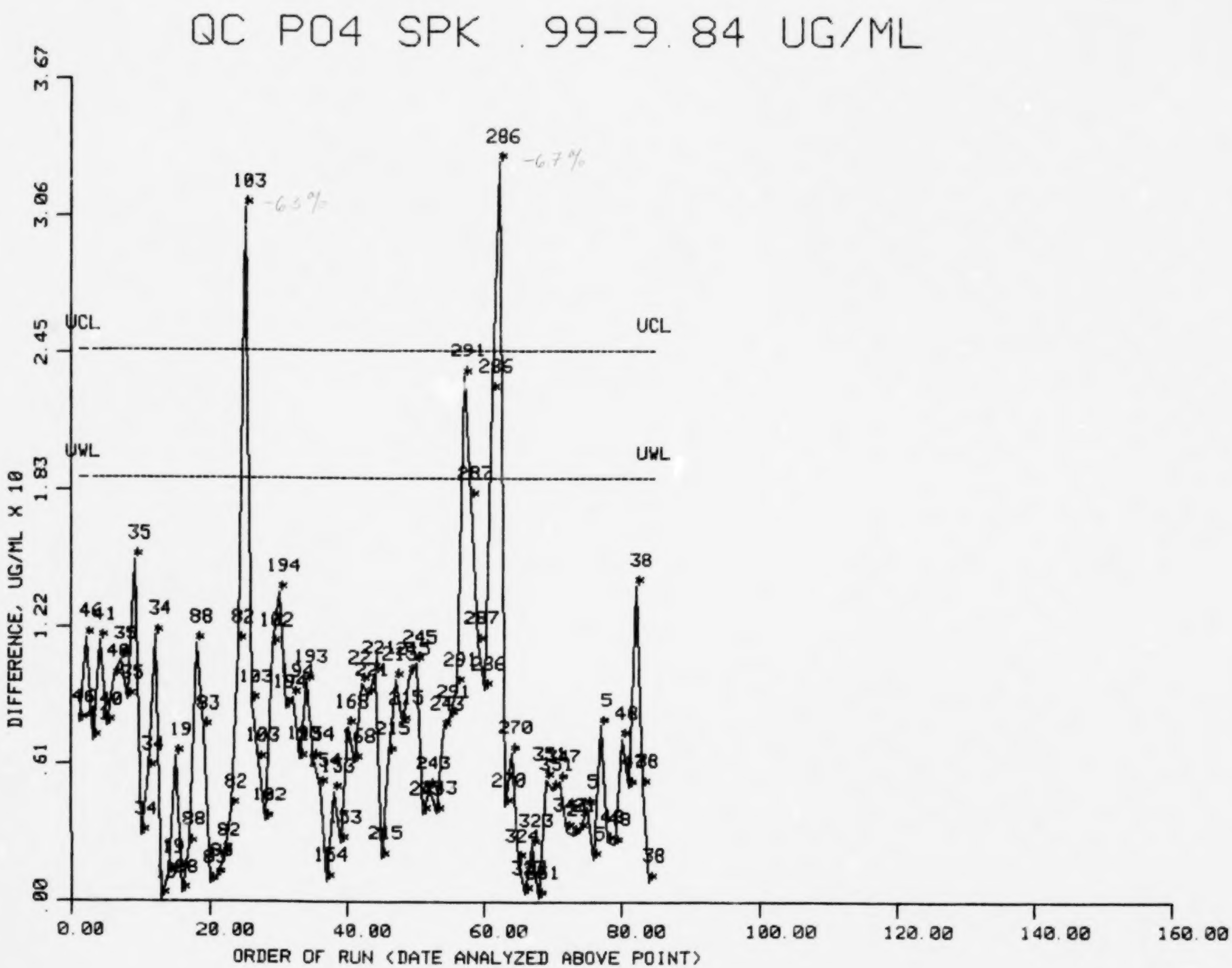


QC PO4 DUP 0-.99 UG/ML



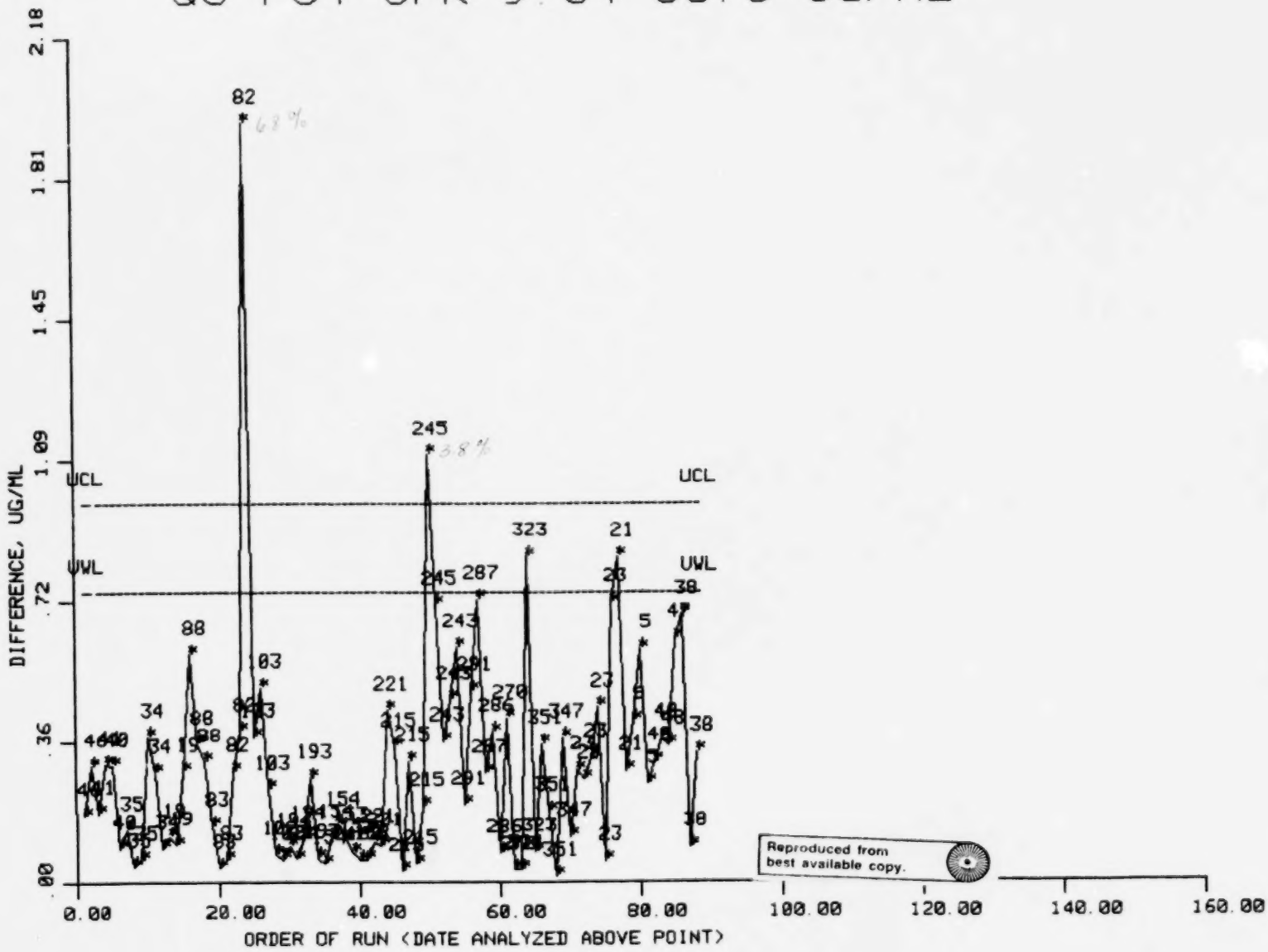
QC PO4 SPK 0-.99 UG/ML



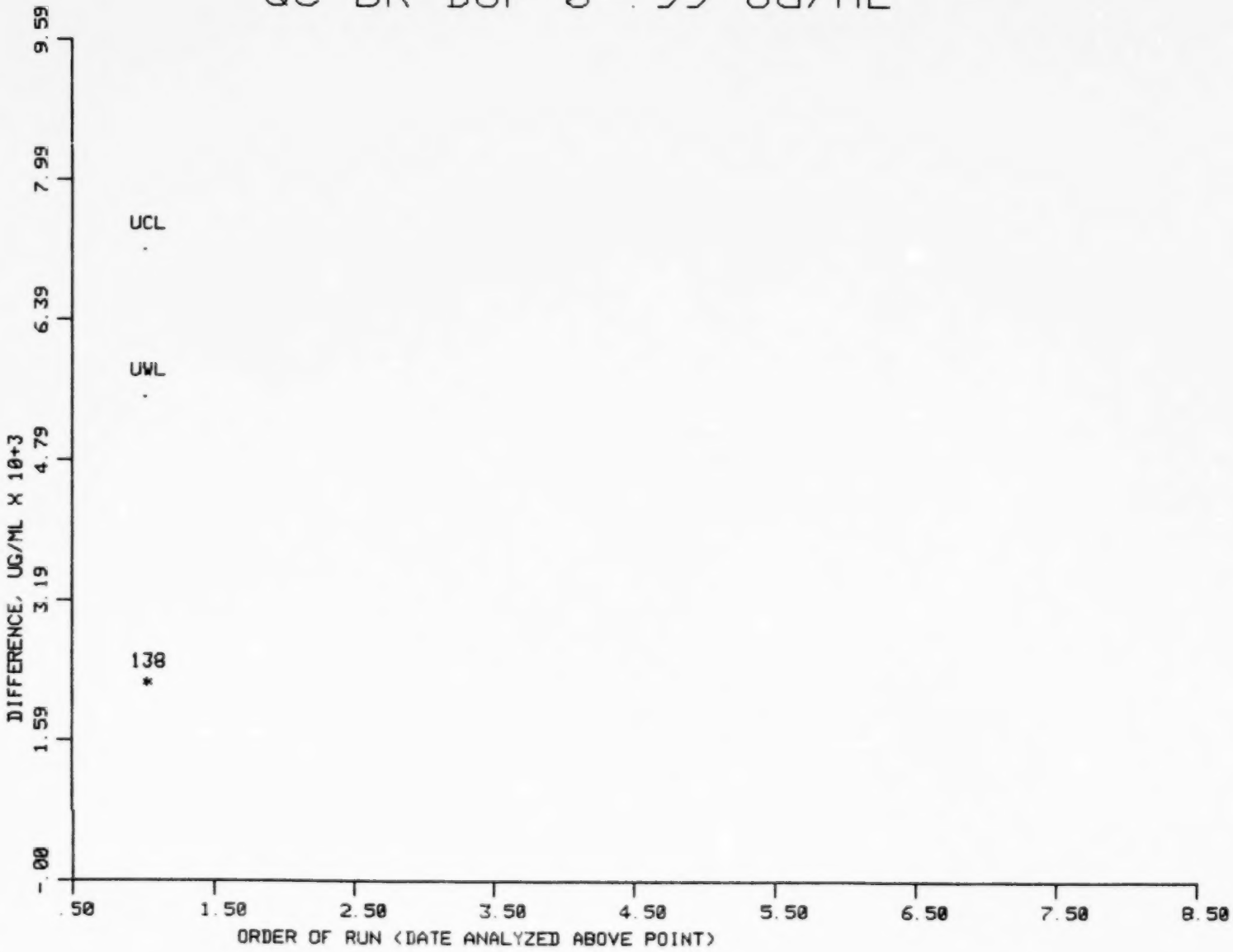

QC PO4 SPK .99-9.84 UG/ML
DIFFERENCE, UG/ML X 10
ORDER OF RUN (DATE ANALYZED ABOVE POINT)
UCL
UWL
-6.3%
-6.7%
.00
.61
1.22
1.83
2.45
3.06
3.67
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00

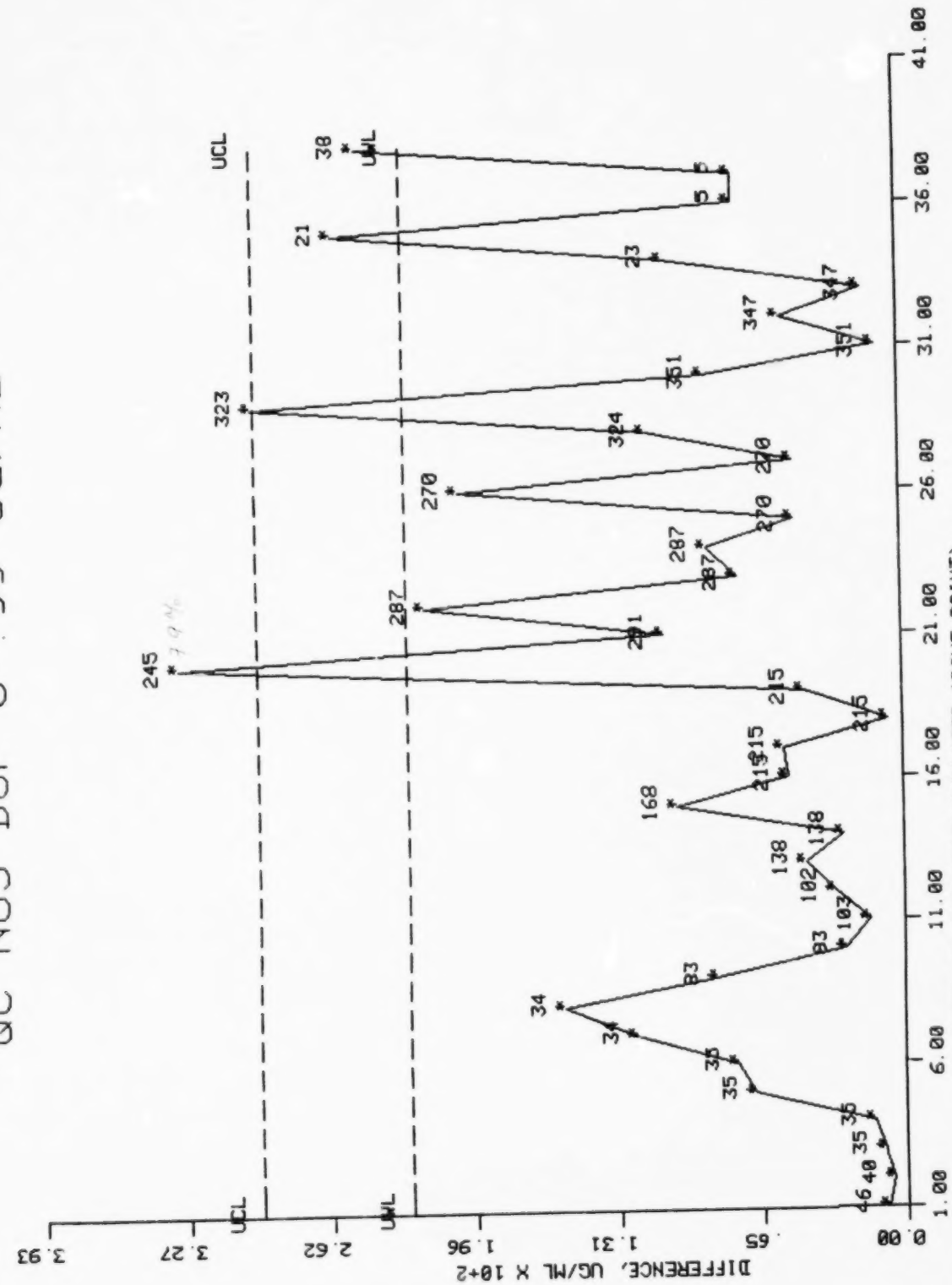
A35

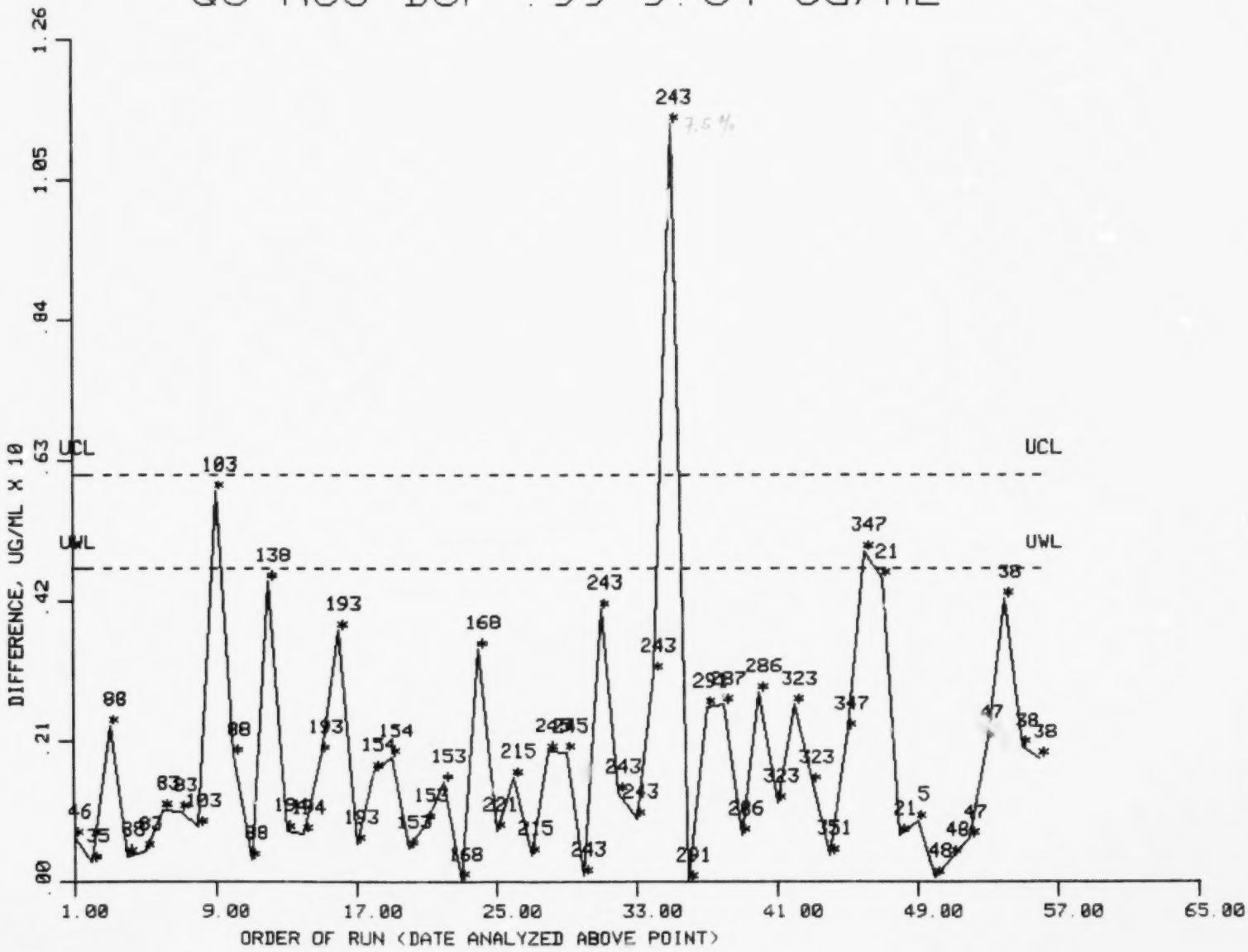
QC P04 SPK 9.84-56.6 UG/ML

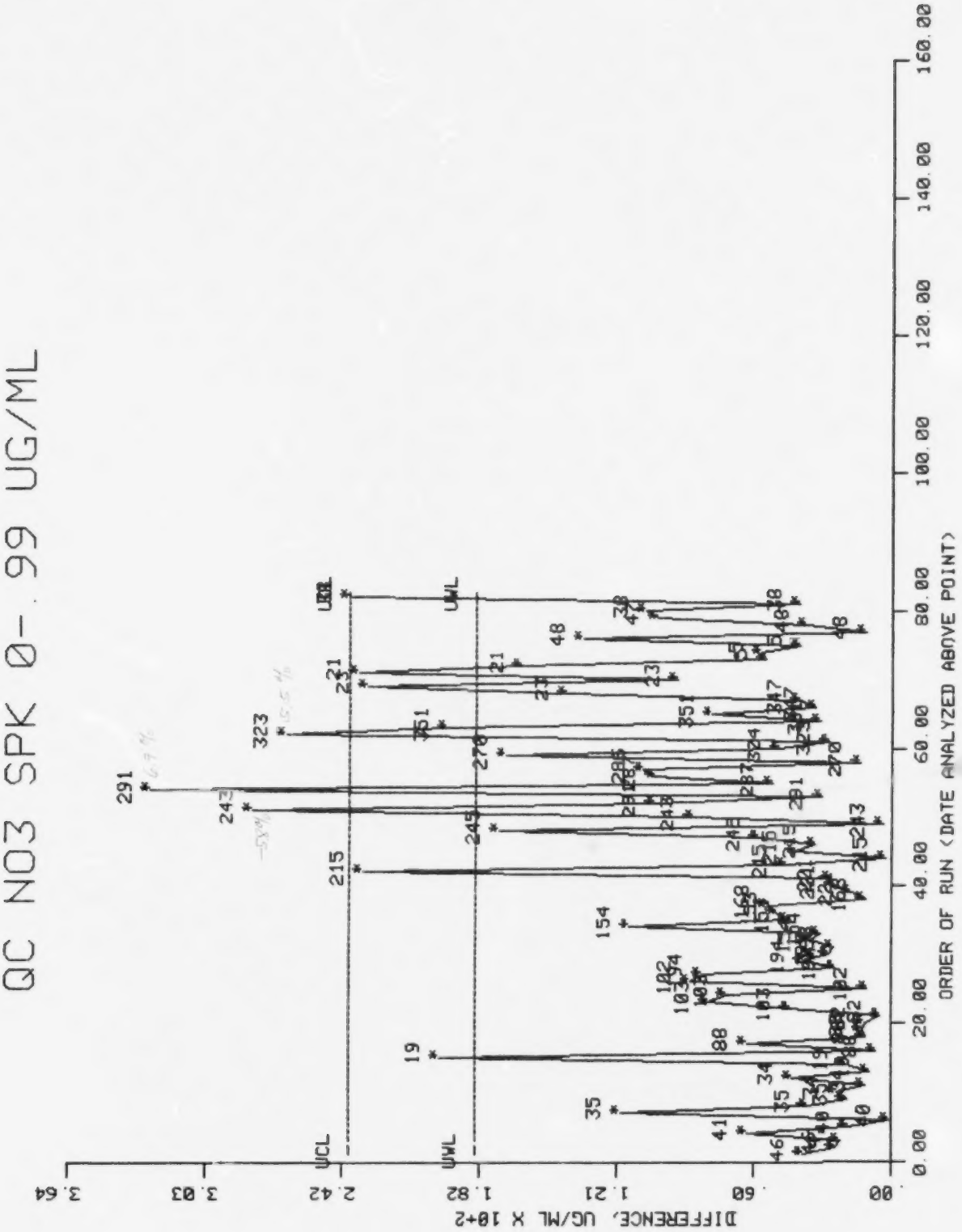


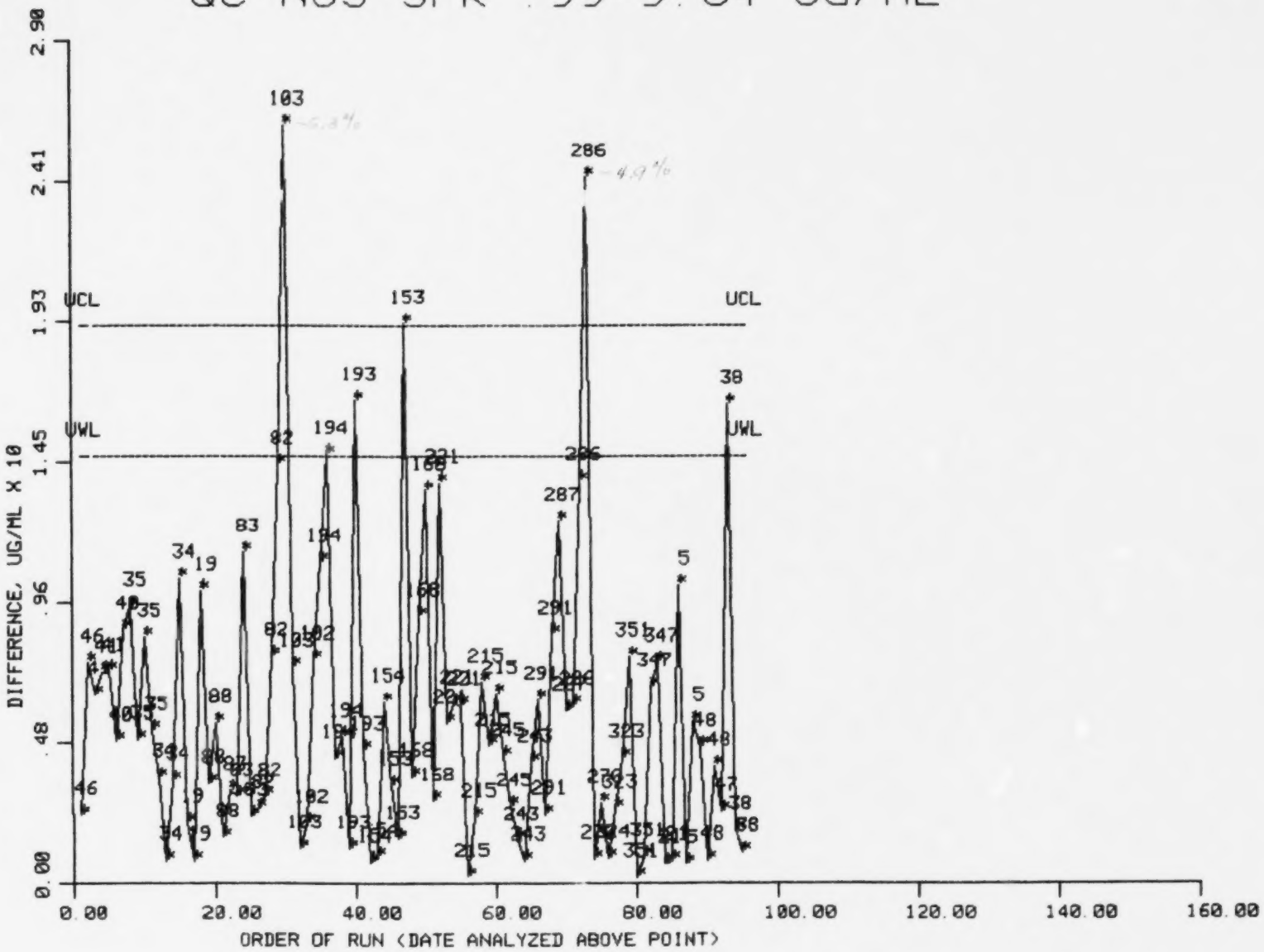
QC BR DUP 0-.99 UG/ML

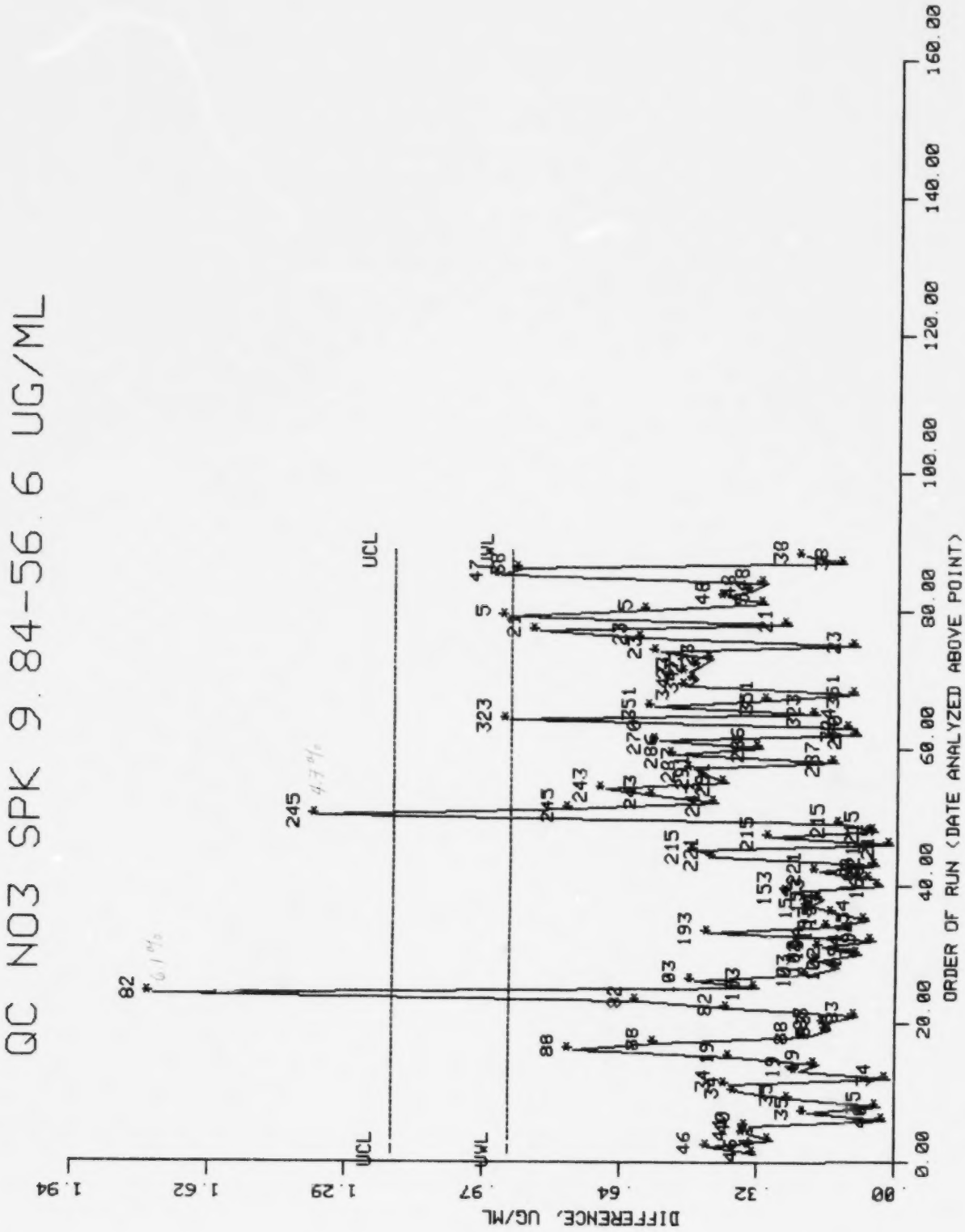


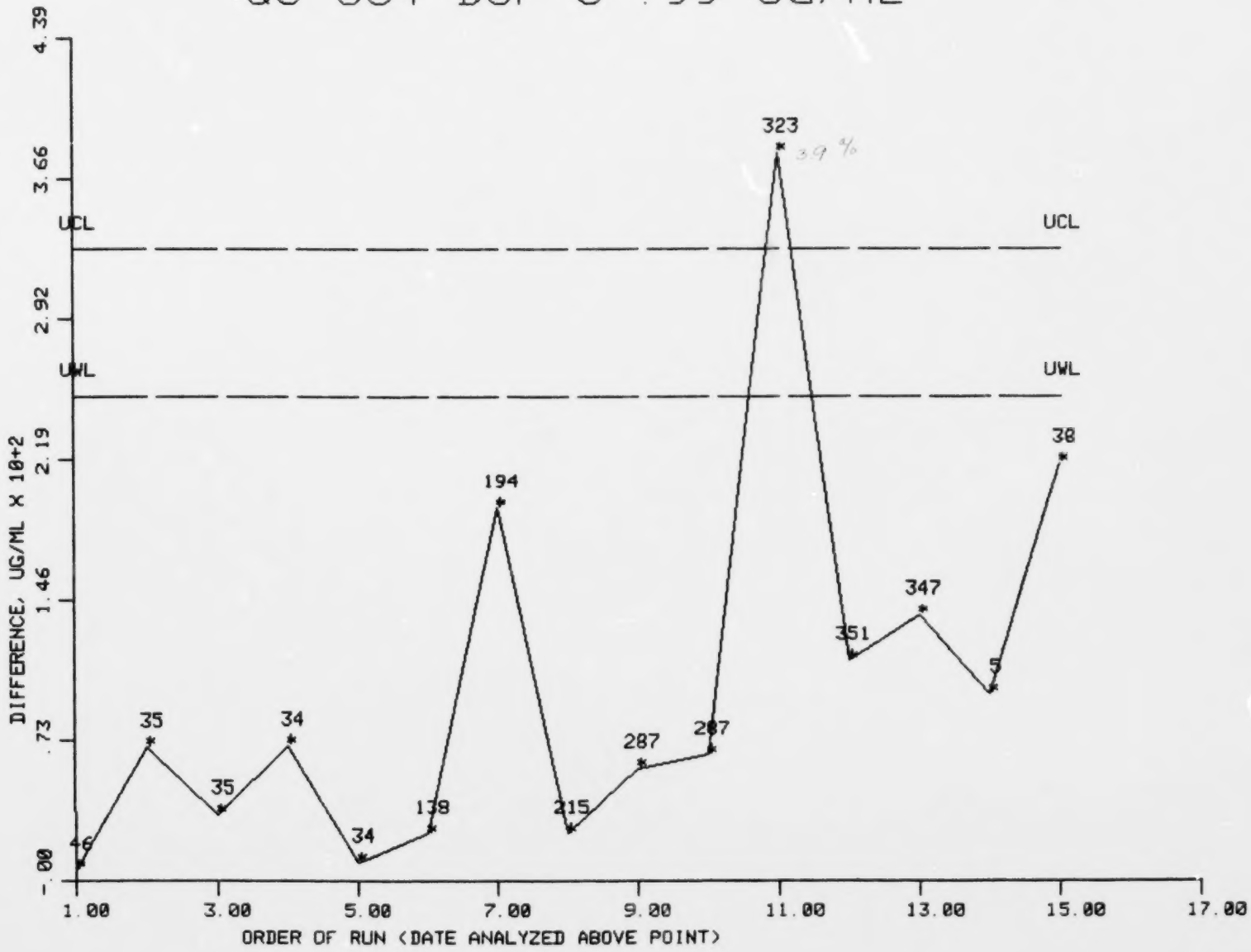

QC NO3 DUP 0-.99 UG/ML
DIFFERENCE, UG/ML X 10+2
3.93
3.27
2.62
1.96
1.31
.65
.00
UCL
LCL
UCL
LCL
1.00
6.00
11.00
16.00
21.00
26.00
31.00
36.00
41.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

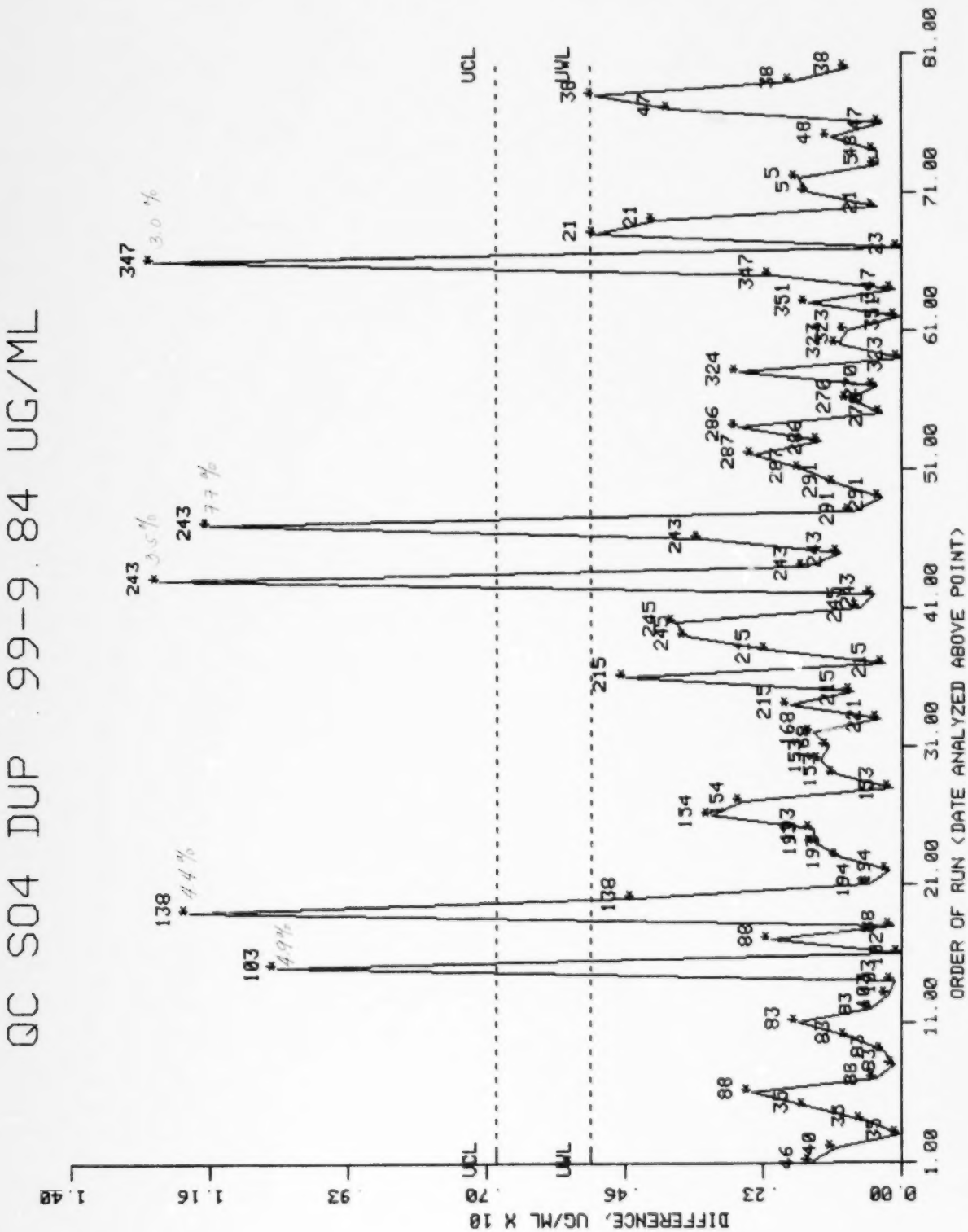

QC NO3 DUP .99-9.84 UG/ML
DIFFERENCE, UG/ML X 10
1.26
1.05
.84
.63
.42
.21
.00
UCL
UWL
1.00
9.00
17.00
25.00
33.00
41.00
49.00
57.00
65.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)


QC NO3 SPK 0-.99 UG/ML
DIFFERENCE, UG/ML X 10+2
3.64
3.03
2.42
1.82
1.21
.60
.00
UCL
UWL
UWL
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

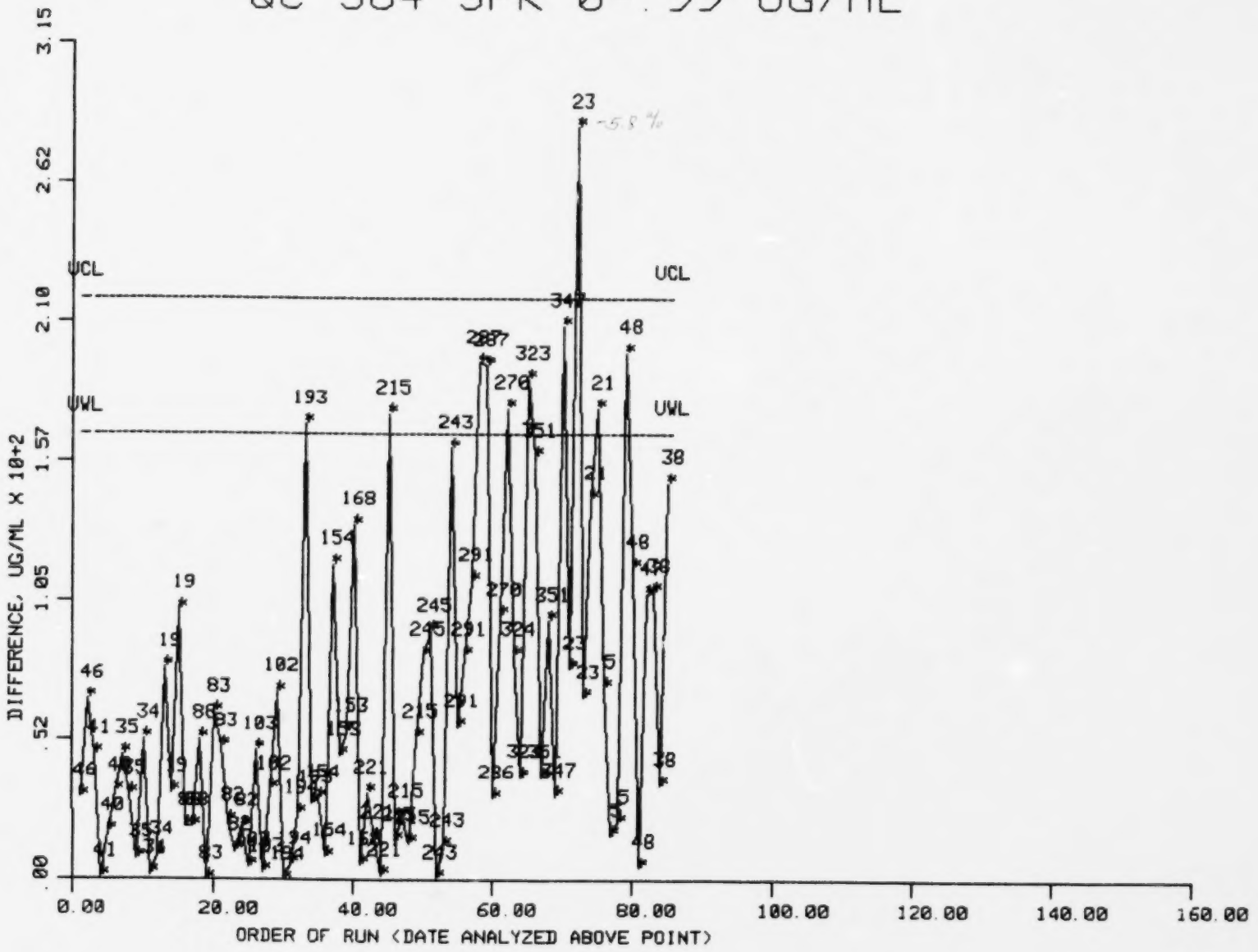

QC NO3 SPK .99-9.84 UG/ML
DIFFERENCE, UG/ML X 10
2.90
2.41
1.93
1.45
.96
.48
0.00
UCL
UWL
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

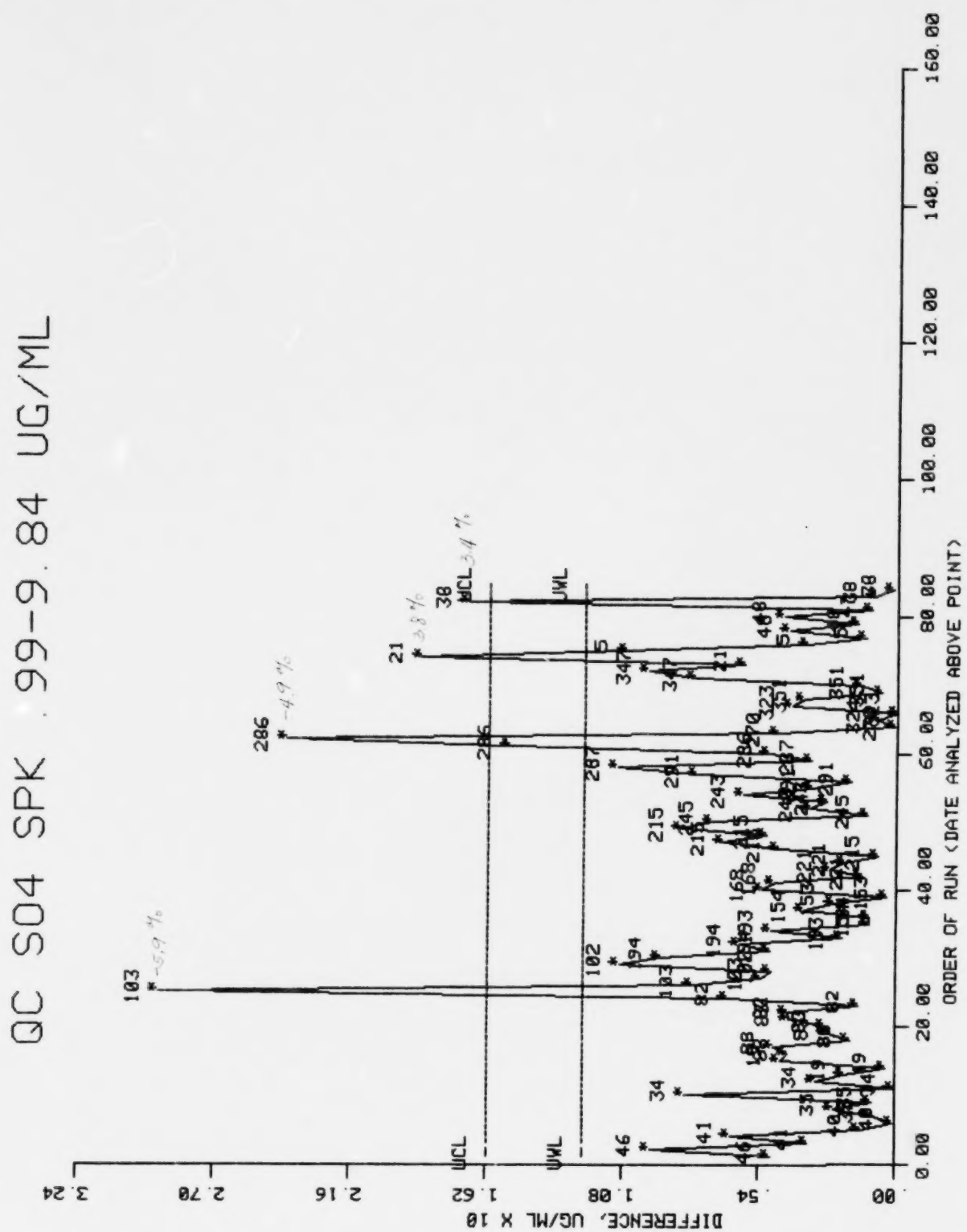

QC NO3 SPK 9.84-56.6 UG/ML
DIFFERENCE, UG/ML
ORDER OF RUN (DATE ANALYZED ABOVE POINT)
UCL
LWL
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
00
32
64
97
1.29
1.62
1.94


QC SO4 DUP 0-.99 UG/ML
4.39
3.66
2.92
2.19
1.46
.73
-.00
DIFFERENCE, UG/ML X 10+2
UCL
UCL
UWL
UWL
323
39 %
38
194
347
351
5
35
34
35
34
138
215
287
287
46
1.00
3.00
5.00
7.00
9.00
11.00
13.00
15.00
17.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

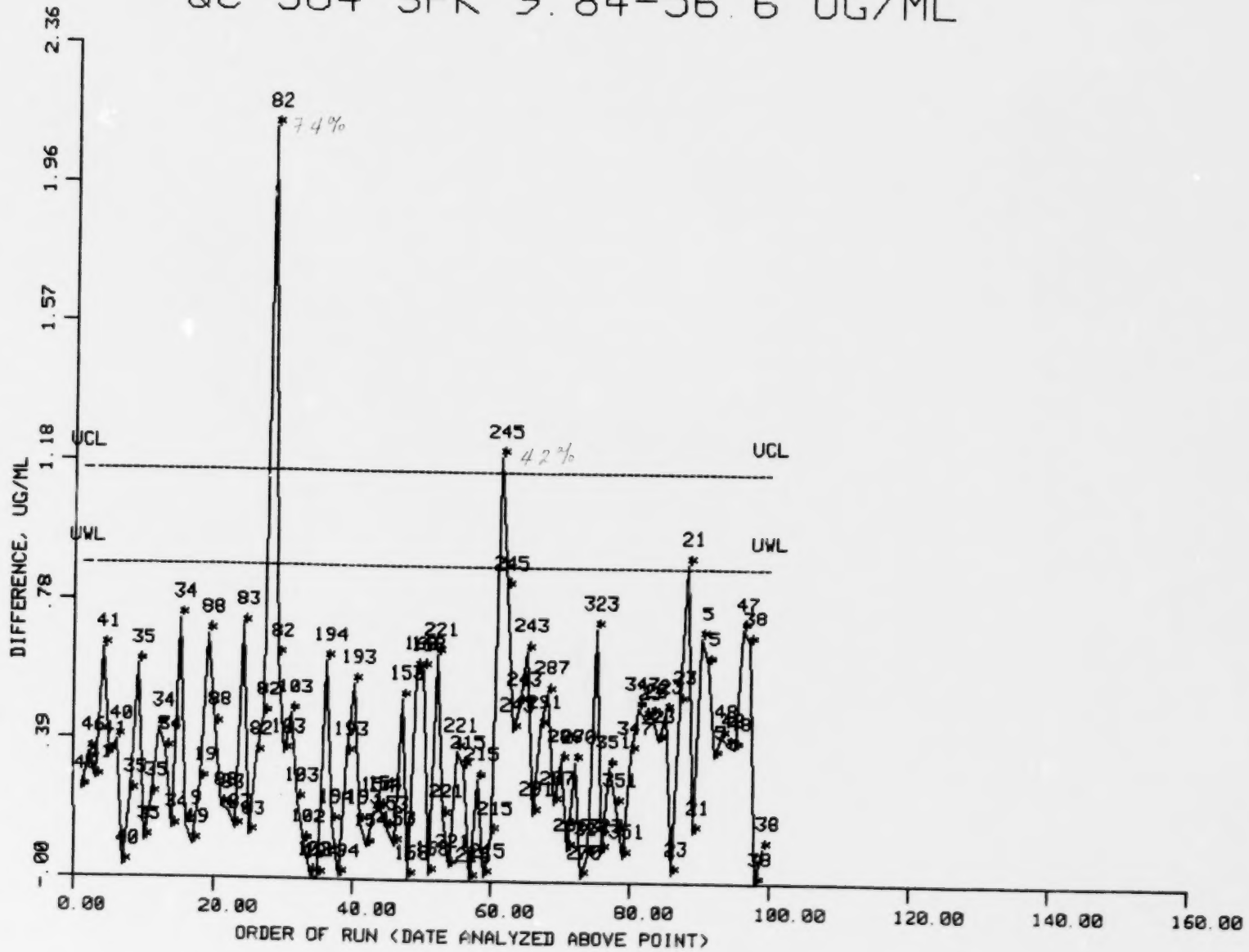

QC SO4 DUP 99-9.84 UG/ML
DIFFERENCE, UG/ML X 10
0.00
23
46
70
93
1.16
1.40
UCL
LWL
1.00
11.00
21.00
31.00
41.00
51.00
61.00
71.00
81.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

QC SO4 SPK 0-.99 UG/ML

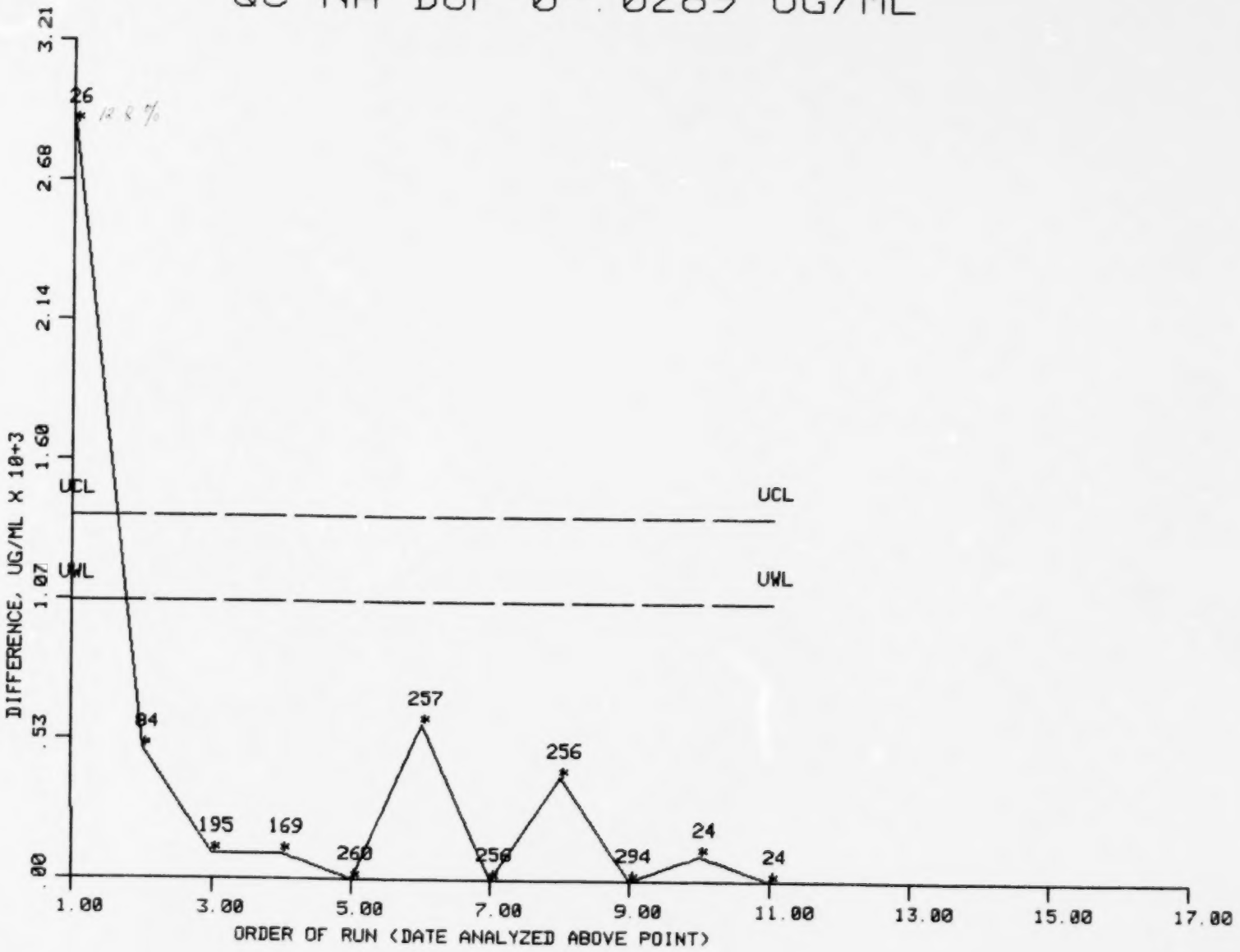



QC SO4 SPK .99-9.84 UG/ML
DIFFERENCE, UG/ML X 10
ORDER OF RUN (DATE ANALYZED ABOVE POINT)
UCL
UWL
LCL
LWL
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
.00
.54
1.08
1.62
2.16
2.70
3.24

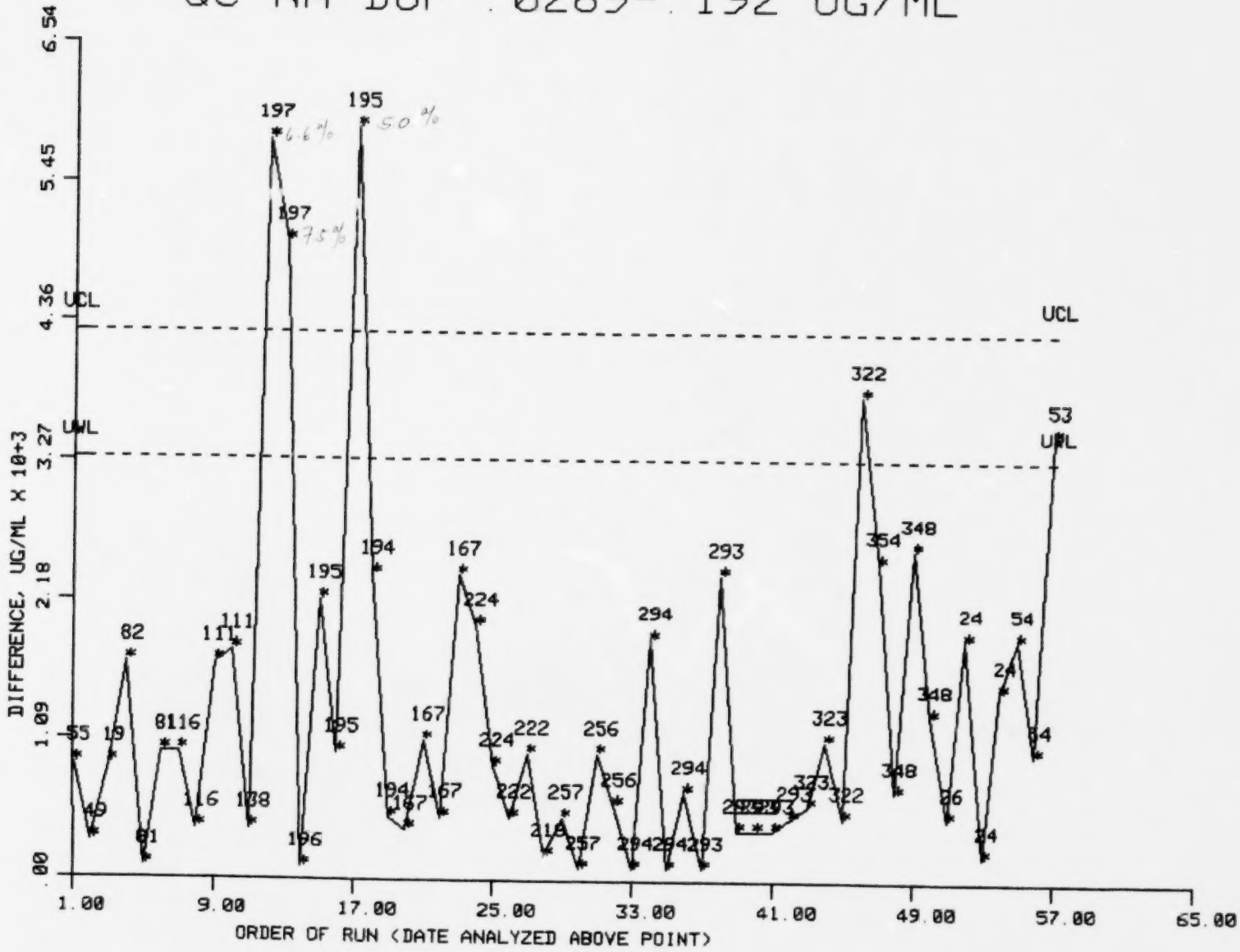
QC SO4 SPK 9.84-56.6 UG/ML

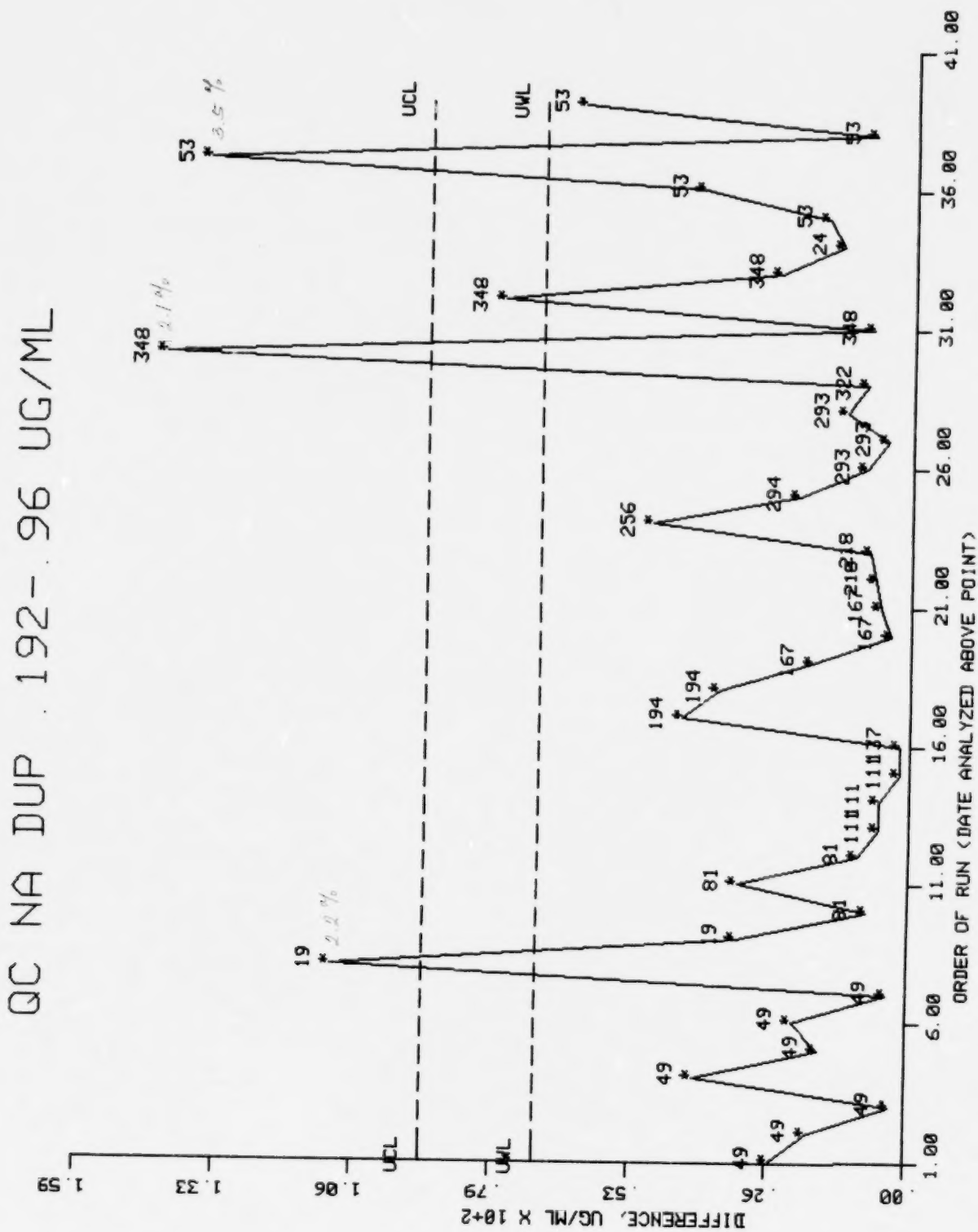


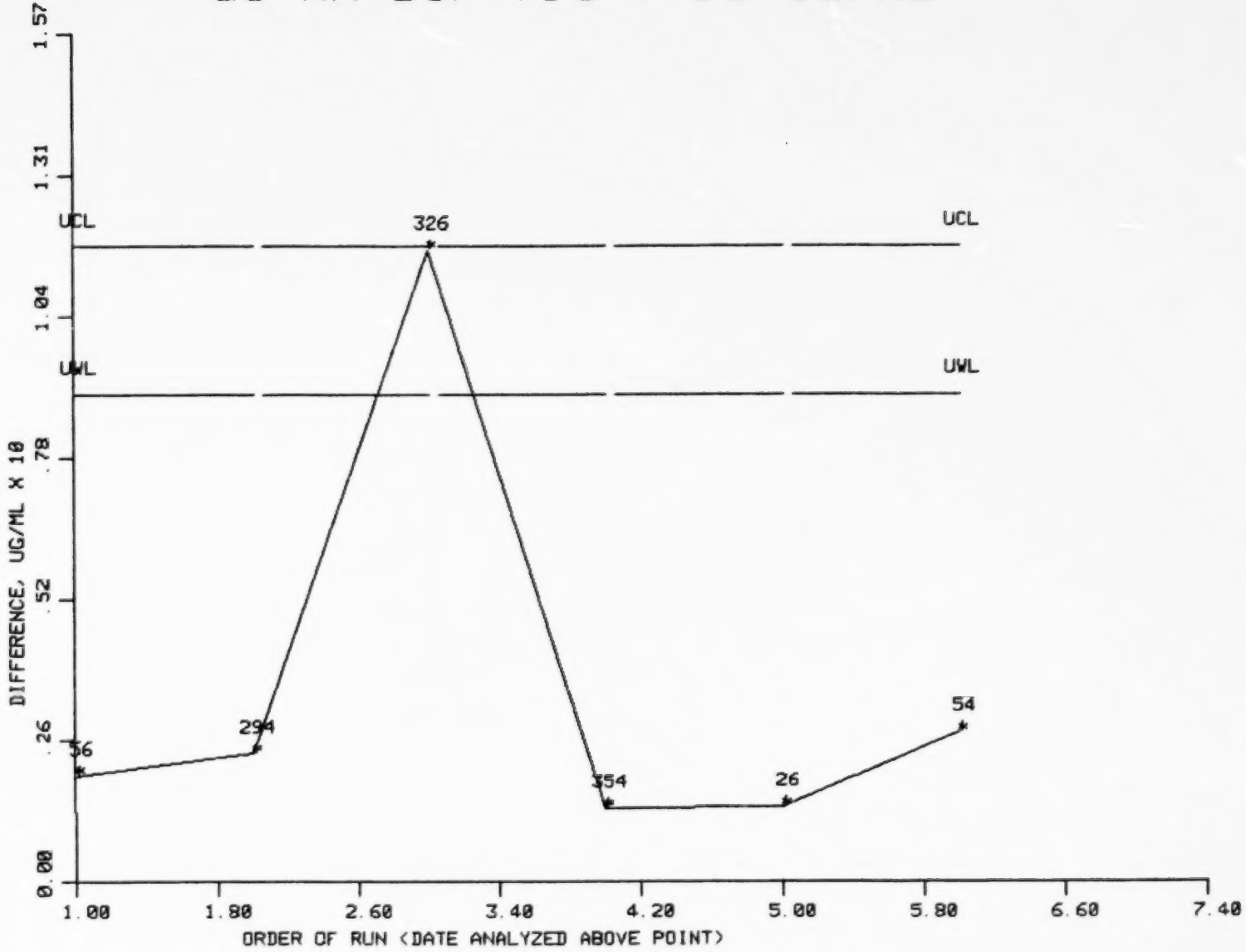
QC NA DUP 0-.0289 UG/ML

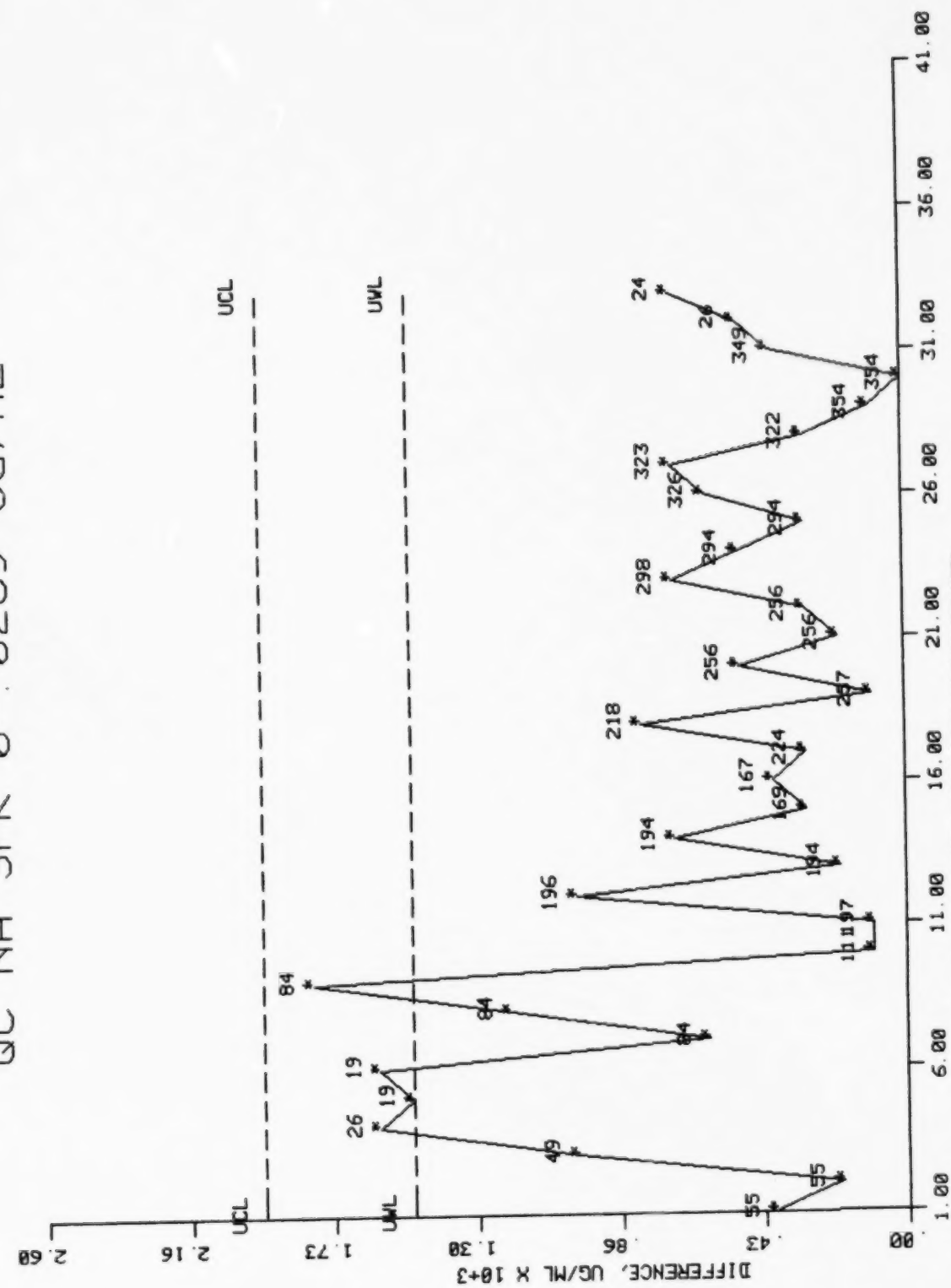


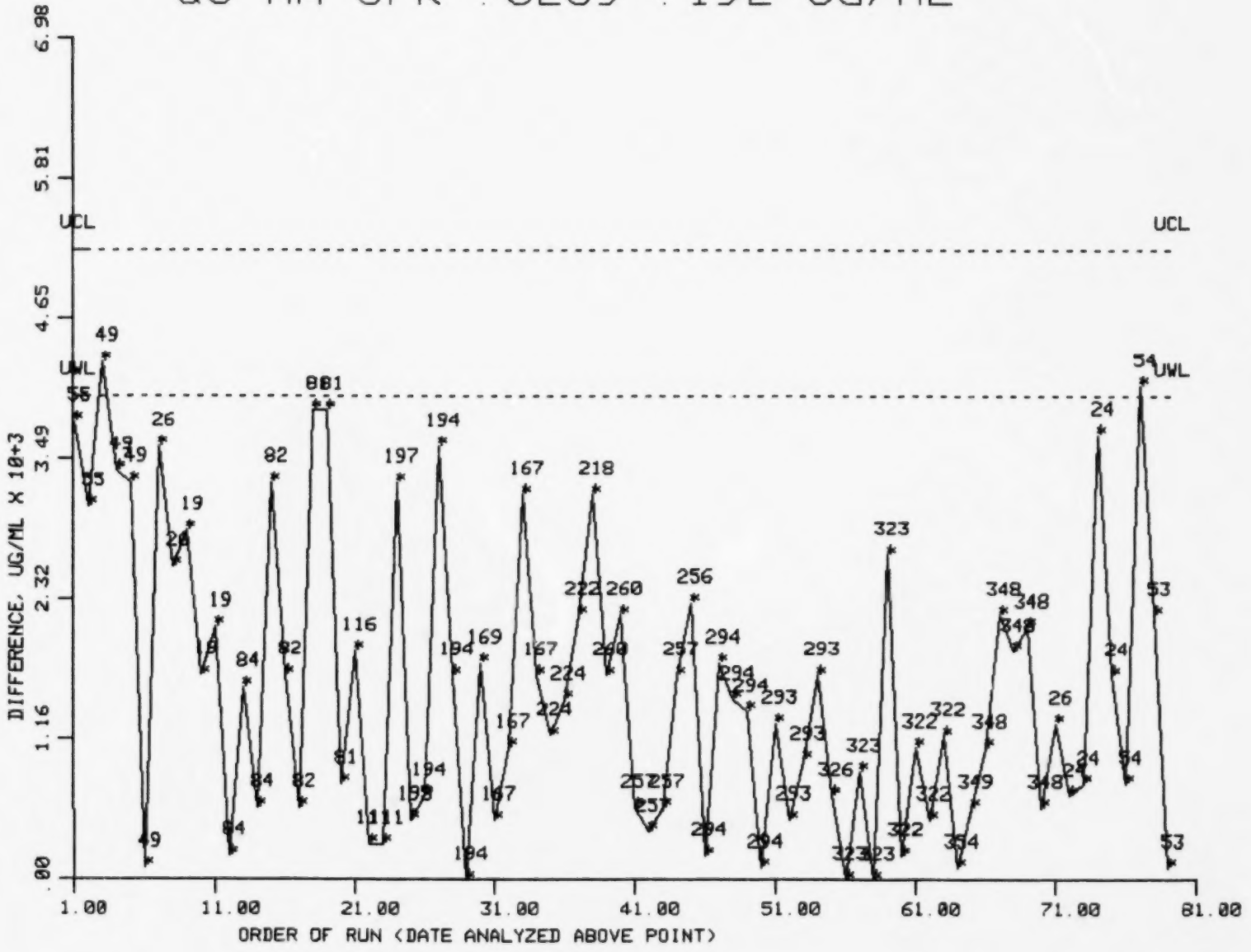
QC NA DUP .0289-.192 UG/ML

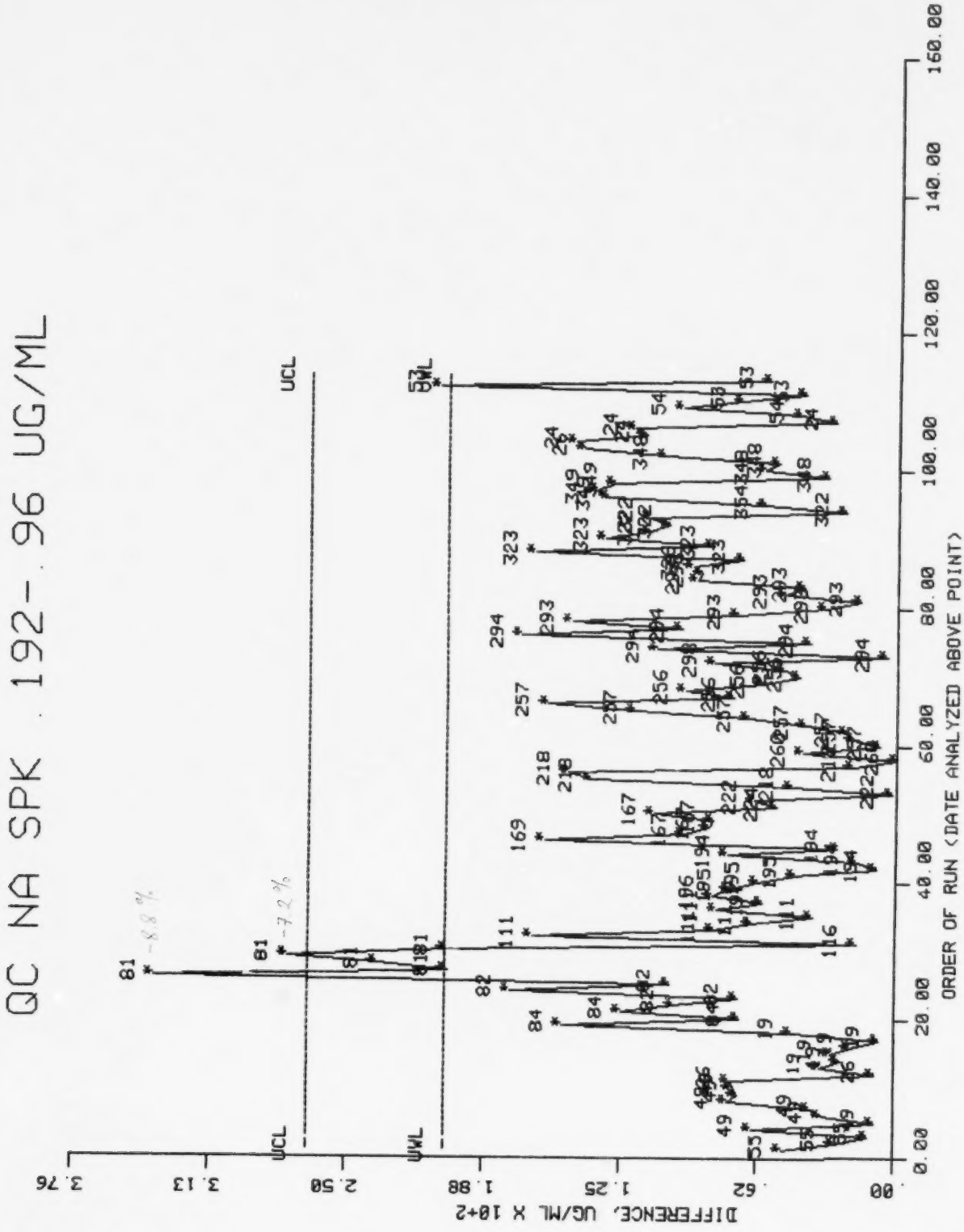


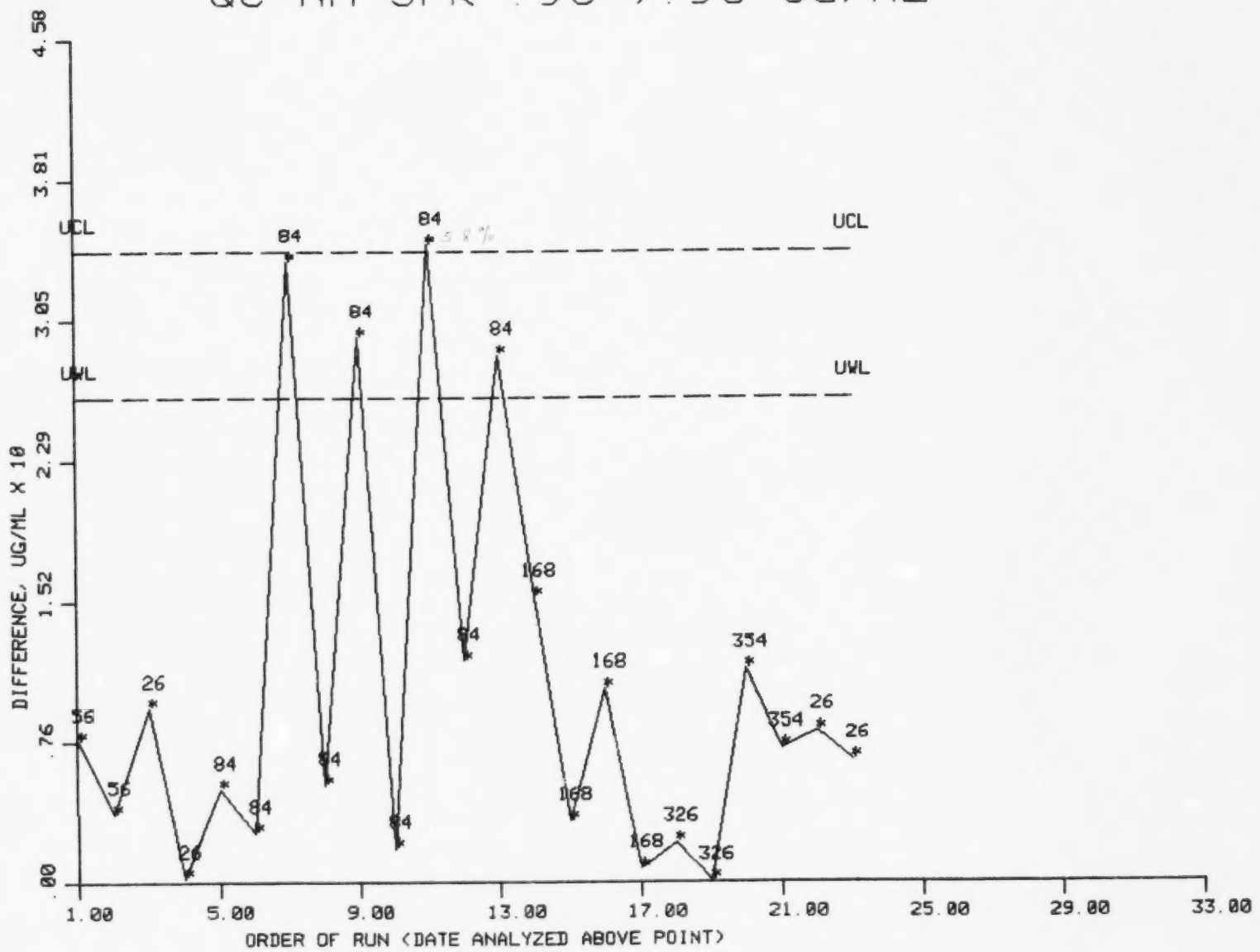

QC NA DUP . 192- 96 UG/ML
DIFFERENCE, UG/ML X 10+2
.00
.26
.53
.79
1.06
1.33
1.59
UWL
UCL
1.00
6.00
11.00
16.00
21.00
26.00
31.00
36.00
41.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

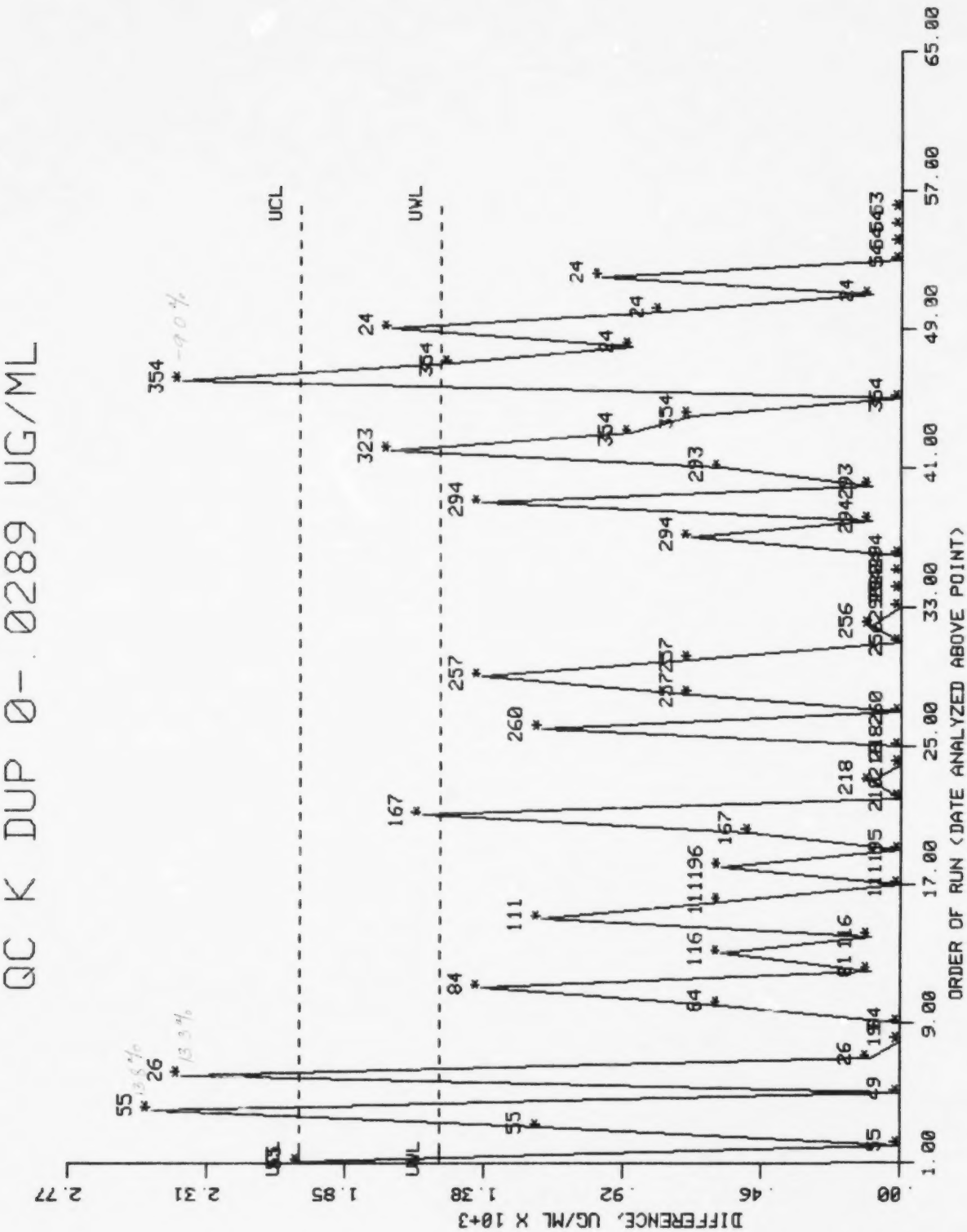

QC NA DUP .96->.96 UG/ML
1.57
1.31
1.04
.78
.52
.26
0.00
DIFFERENCE, UG/ML X 10
UCL
UCL
UWL
UWL
326
294
56
354
26
54
1.00
1.80
2.60
3.40
4.20
5.00
5.80
6.60
7.40
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

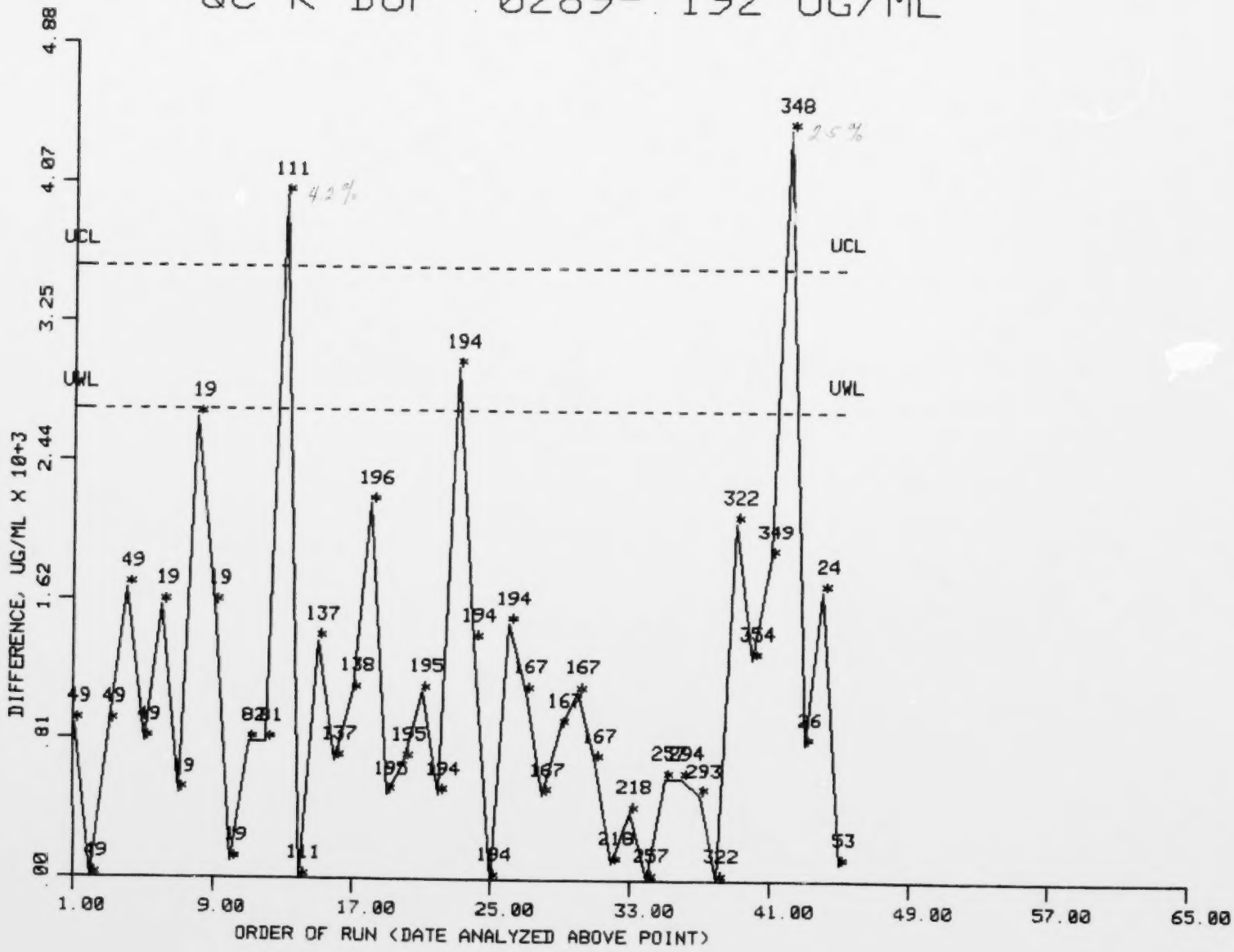

QC NA SPK 0- 0289 UG/ML
UCL
UWL
UCL
UWL
DIFFERENCE, UG/ML X 10+3
.00
.43
.86
1.30
1.73
2.16
2.60
1.00
6.00
11.00
16.00
21.00
26.00
31.00
36.00
41.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

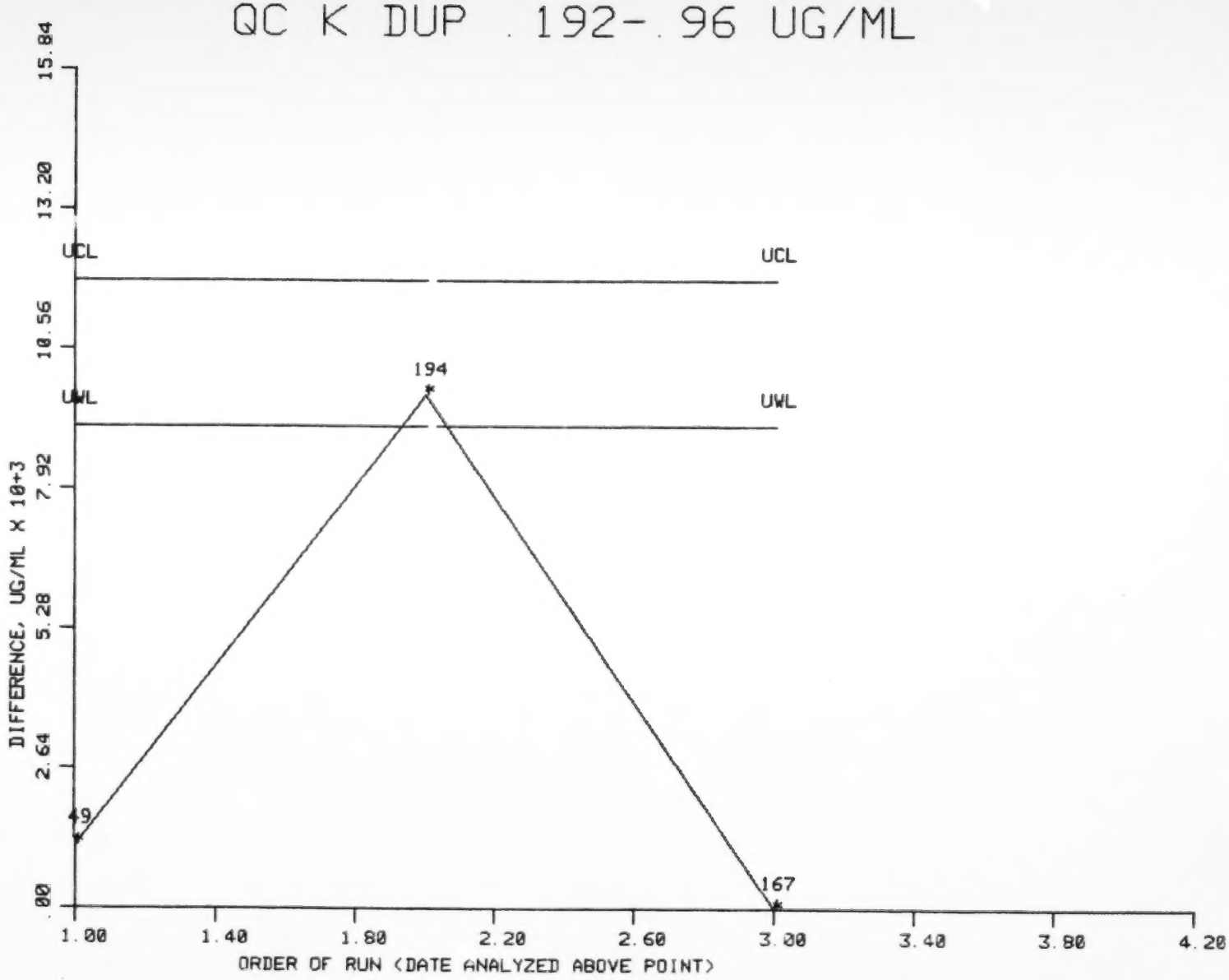

QC NA SPK .0289-.192 UG/ML
DIFFERENCE, UG/ML X 10+3
6.98
5.81
4.65
3.49
2.32
1.16
.00
UCL
UWL
1.00
11.00
21.00
31.00
41.00
51.00
61.00
71.00
81.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

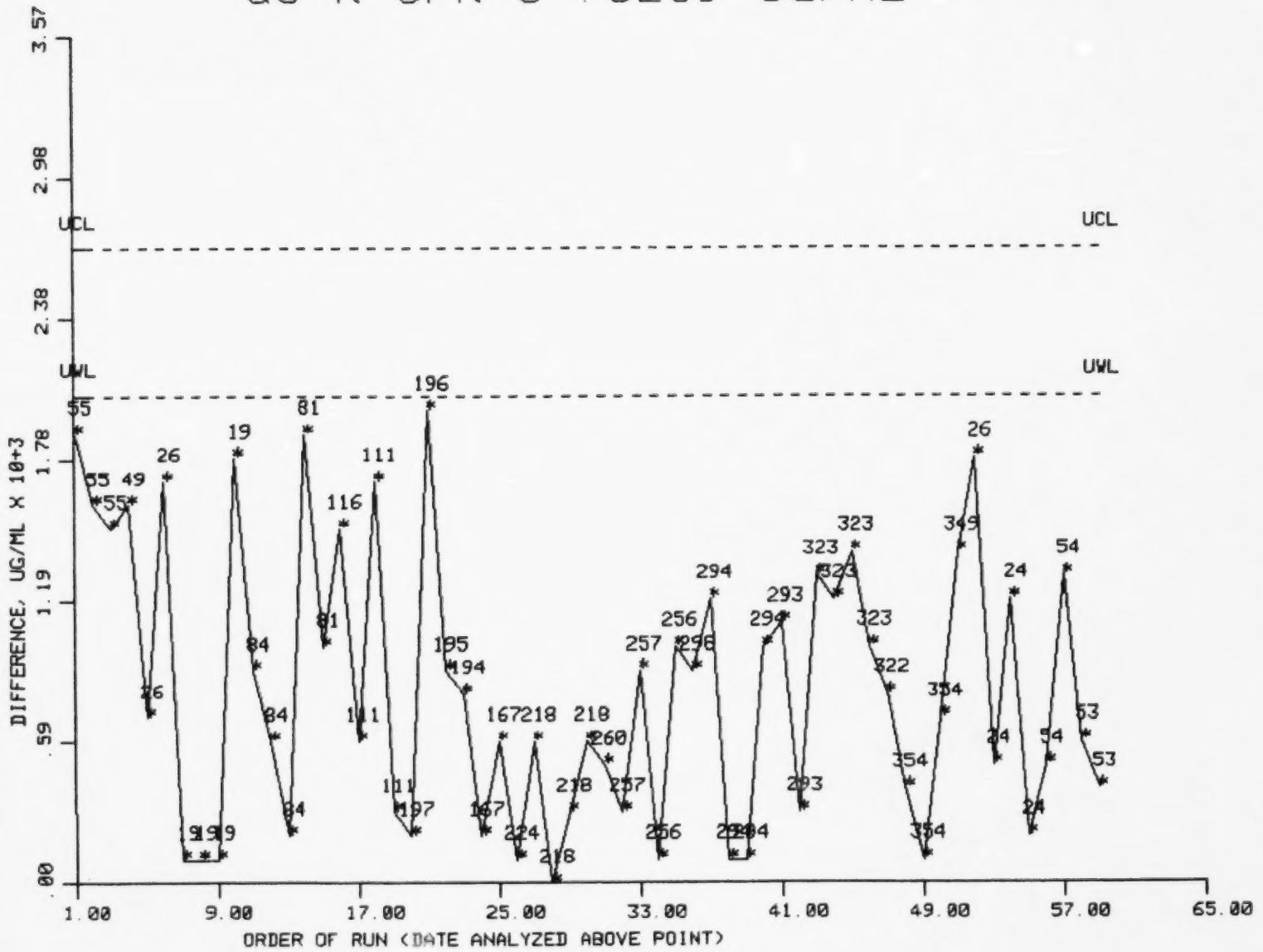

QC NA SPK . 192-.96 UG/ML
DIFFERENCE, UG/ML X 10+2
3.76
3.13
2.50
1.88
1.25
.62
.00
UCL
UWL
UCL
UWL
-8.8 %
-7.2 %
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

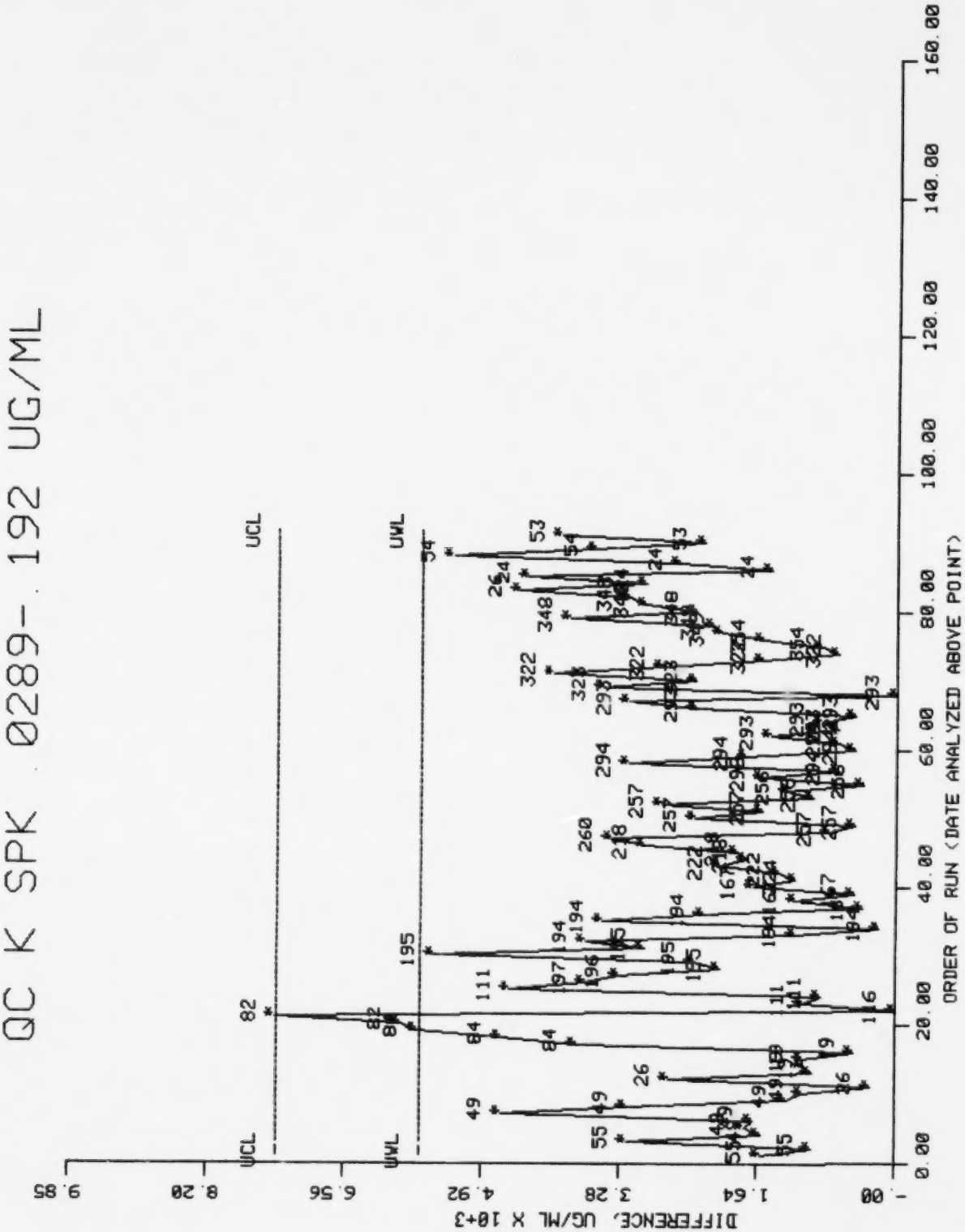

QC NA SPK .96->.96 UG/ML
DIFFERENCE, UG/ML X 10
4.58
3.81
3.05
2.29
1.52
.76
.00
UCL
UWL
1.00
5.00
9.00
13.00
17.00
21.00
25.00
29.00
33.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)
56
26
84
168
326
354

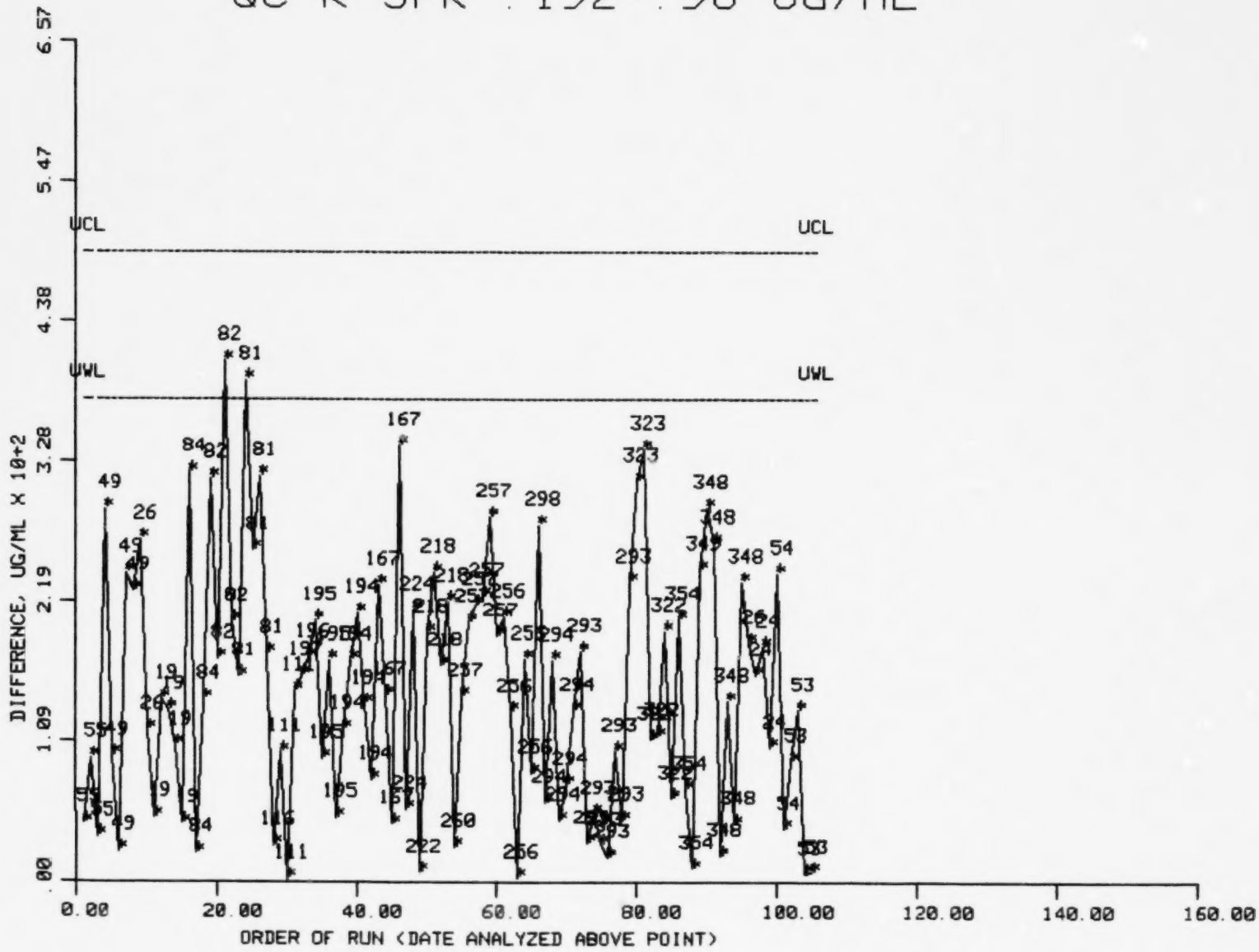

QC K DUP 0- .0289 UG/ML
UCL
UWL
DIFFERENCE, UG/ML X 10+3
ORDER OF RUN (DATE ANALYZED ABOVE POINT)
2.77
2.31
1.85
1.38
92
46
00
1.00
9.00
17.00
25.00
33.00
41.00
49.00
57.00
65.00

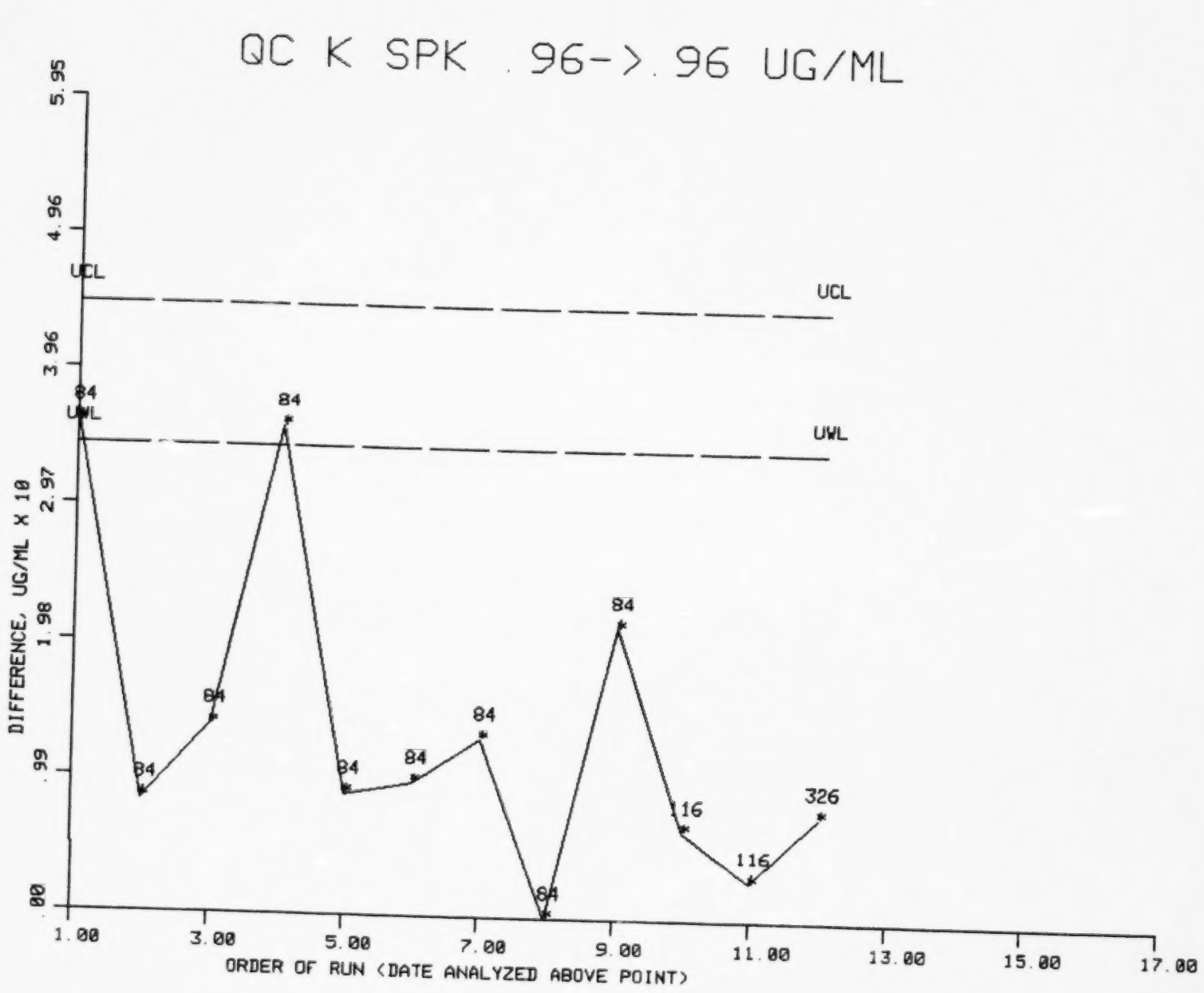

QC K DUP .0289-.192 UG/ML
DIFFERENCE, UG/ML X 10+3
4.88
4.07
3.25
2.44
1.62
.81
.00
UCL
UWL
1.00
9.00
17.00
25.00
33.00
41.00
49.00
57.00
65.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

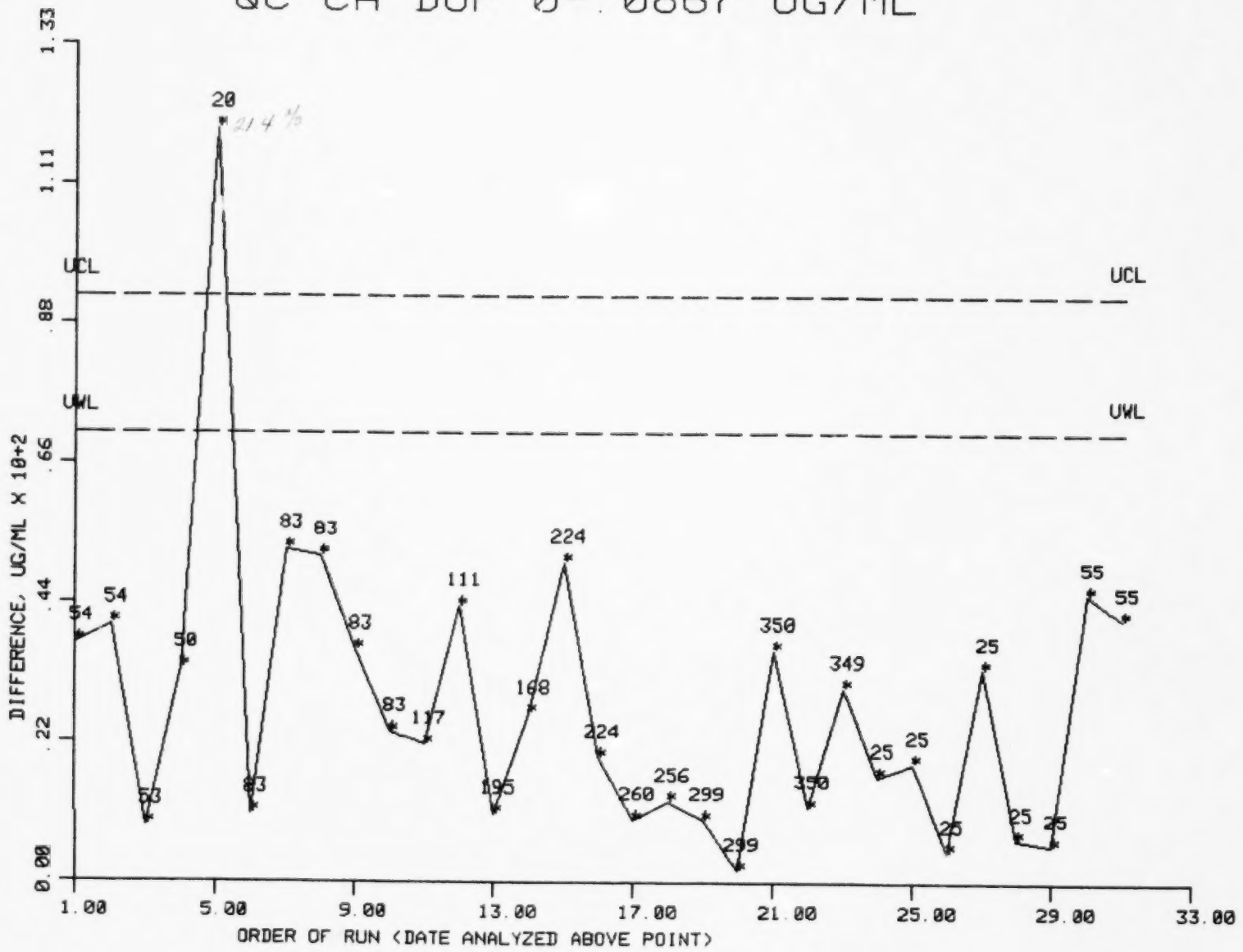

QC K DUP .192-.96 UG/ML
15.84
13.20
10.56
7.92
5.28
2.64
.00
DIFFERENCE, UG/ML X 10+3
UCL
UCL
UWL
UWL
194
49
167
1.00
1.40
1.80
2.20
2.60
3.00
3.40
3.80
4.20
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

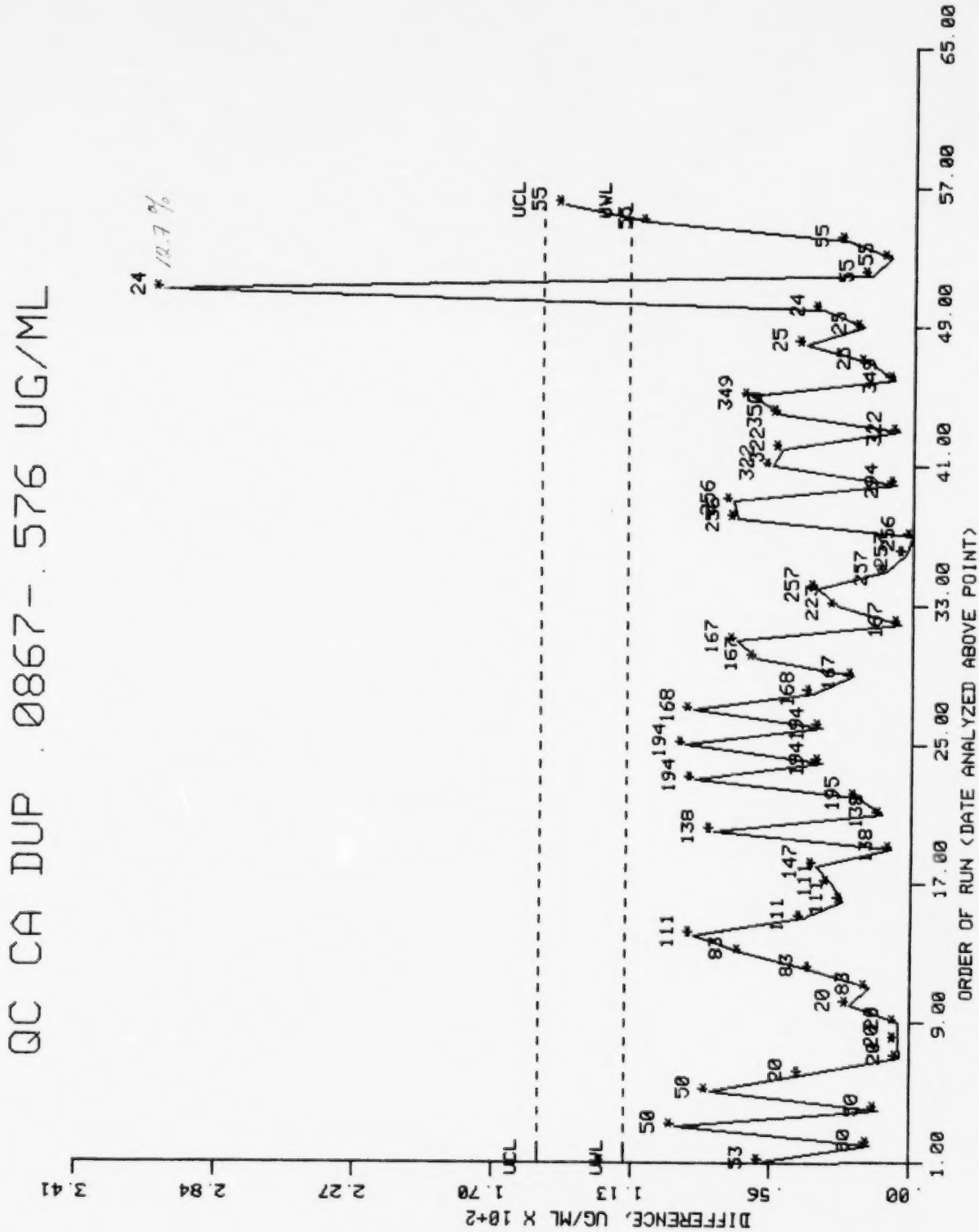

QC K SPK 0-.0289 UG/ML
DIFFERENCE, UG/ML X 10+3
3.57
2.98
2.38
1.78
1.19
.59
.00
UCL
UWL
1.00
9.00
17.00
25.00
33.00
41.00
49.00
57.00
65.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)


QC K SPK 0289-.192 UG/ML
DIFFERENCE, UG/ML X 10+3
9.85
8.20
6.56
4.92
3.28
1.64
.00
UCL
UWL
LWL
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

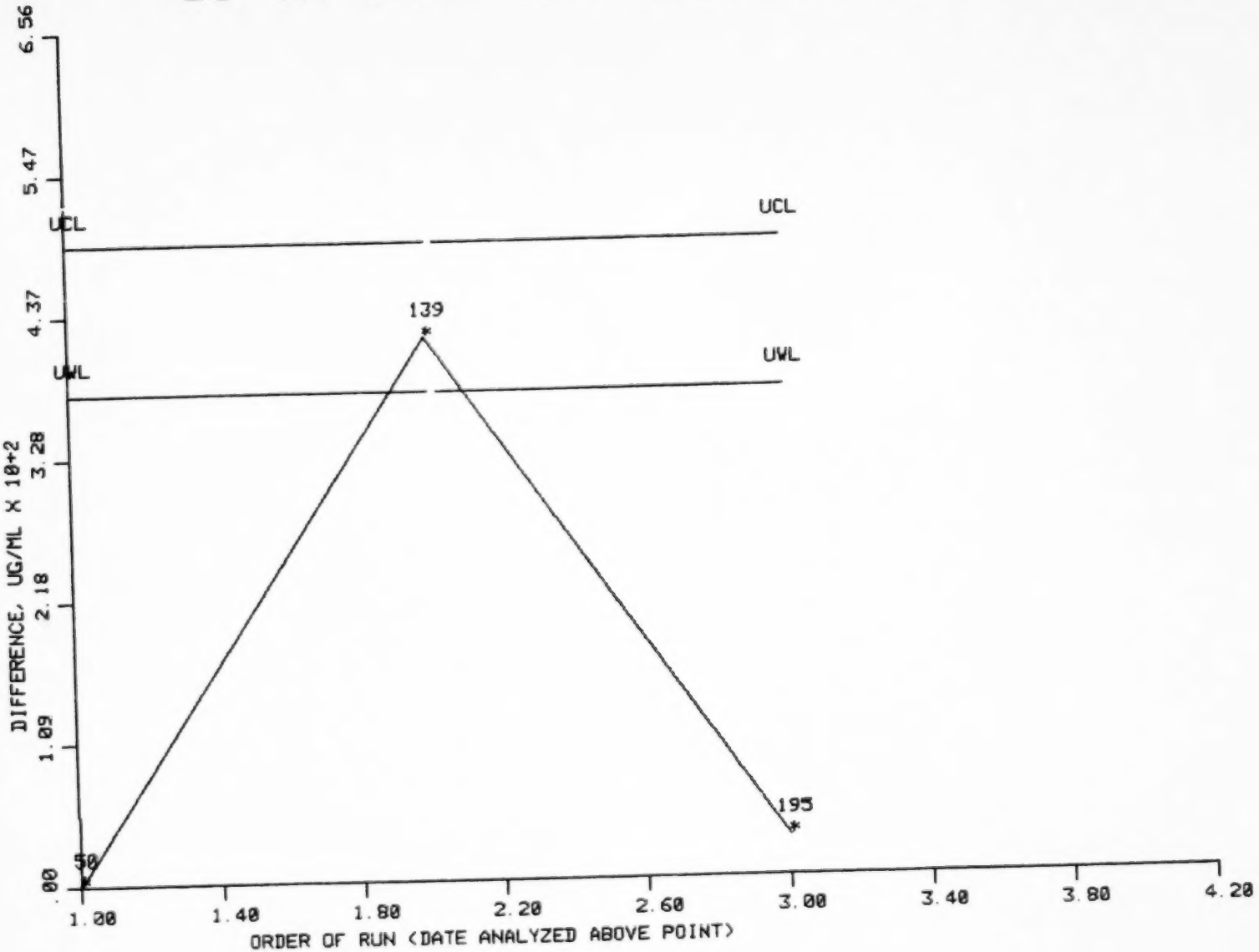

QC K SPK .192-.96 UG/ML
DIFFERENCE, UG/ML X 10+2
.00
1.09
2.19
3.28
4.38
5.47
6.57
UCL
UCL
UWL
UWL
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

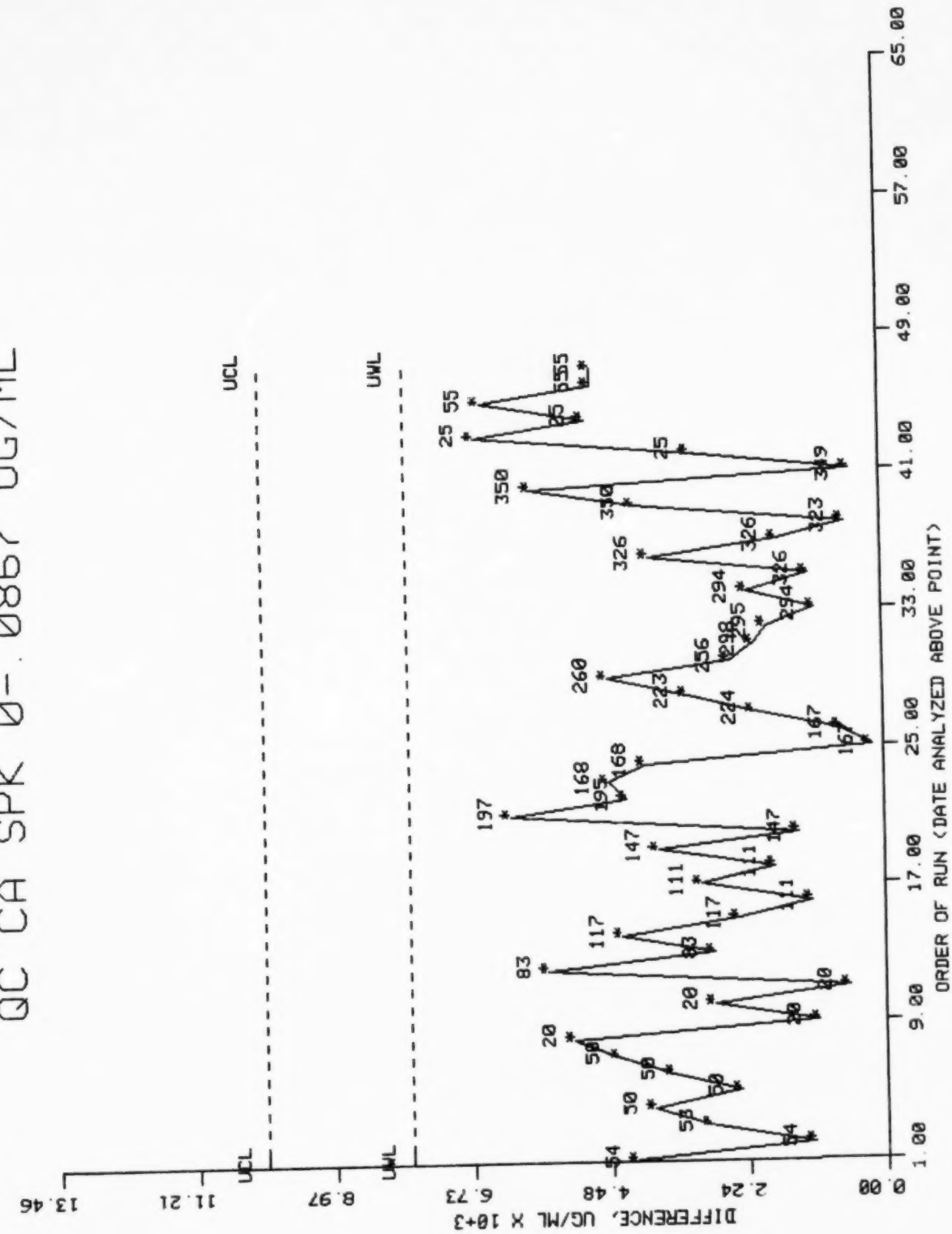

QC K SPK .96->.96 UG/ML
5.95
4.96
3.96
2.97
1.98
.99
.00
DIFFERENCE, UG/ML X 10
UCL
UCL
UWL
UWL
84
84
84
84
84
84
84
84
116
116
326
1.00
3.00
5.00
7.00
9.00
11.00
13.00
15.00
17.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)


QC CA DUP 0-.0867 UG/ML
DIFFERENCE, UG/ML X 10+2
1.33
1.11
.88
.66
.44
.22
0.00
UCL
UWL
UCL
UWL
20
21.4 %
54
54
53
50
83
83
83
83
83
111
117
195
168
224
224
260
256
299
299
350
350
349
25
25
25
25
25
25
55
55
1.00
5.00
9.00
13.00
17.00
21.00
25.00
29.00
33.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

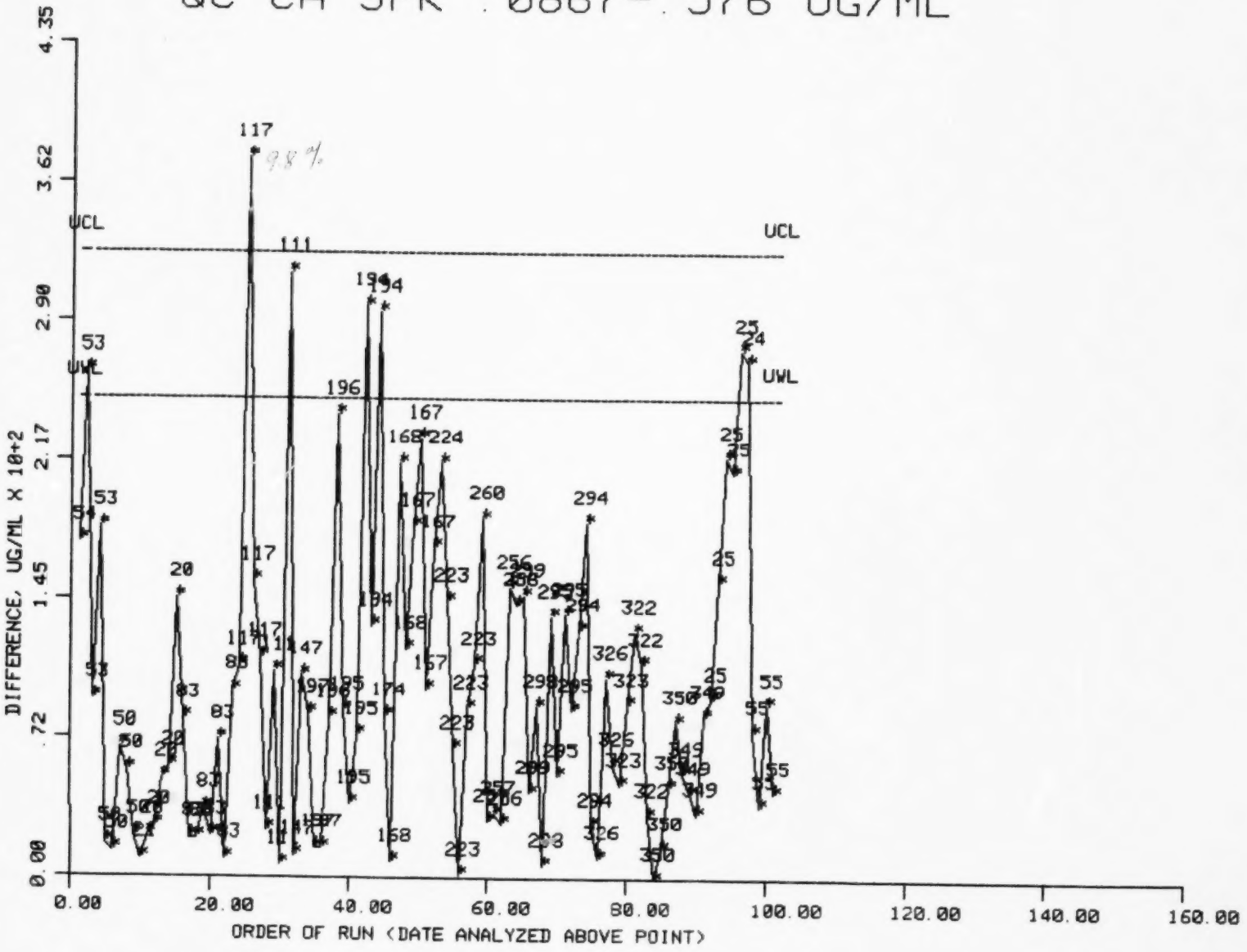

QC CA DUP .0867- .576 UG/ML
DIFFERENCE, UG/ML X 10+2
3.41
2.84
2.27
1.70
1.13
.56
.00
UCL
UWL
ORDER OF RUN (DATE ANALYZED ABOVE POINT)
1.00
9.00
17.00
25.00
33.00
41.00
49.00
57.00
65.00
12.7 %

QC CA DUP .576-2.87 UG/ML

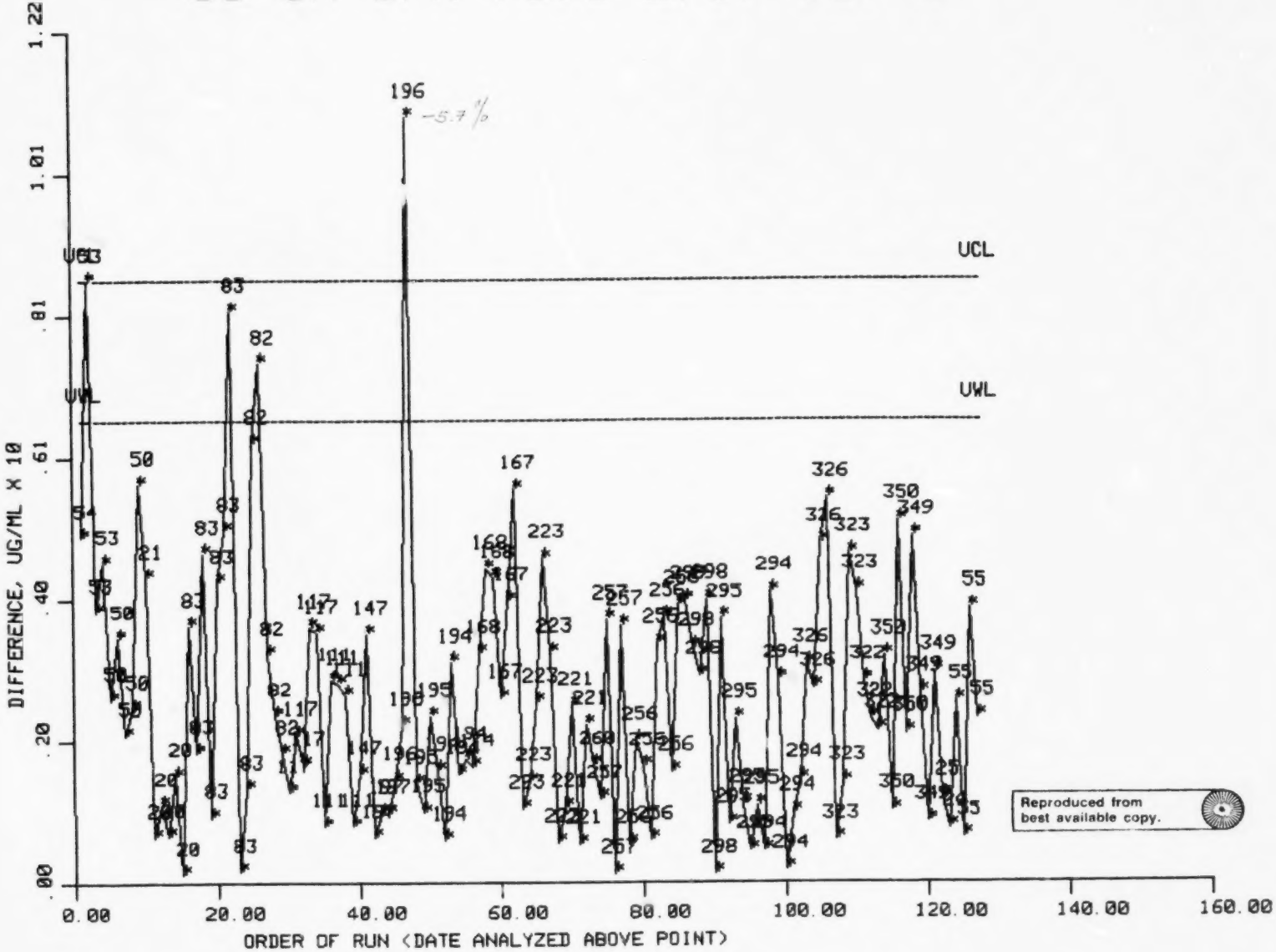



QC CA SPK 0-.0867 UG/ML
UCL
UWL
UCL
UWL
DIFFERENCE, UG/ML X 10+3
0.00
2.24
4.48
6.73
8.97
11.21
13.46
1.00
9.00
17.00
25.00
33.00
41.00
49.00
57.00
65.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

QC CA SPK .0867-.576 UG/ML



QC CA SPK .576-2.87 UG/ML



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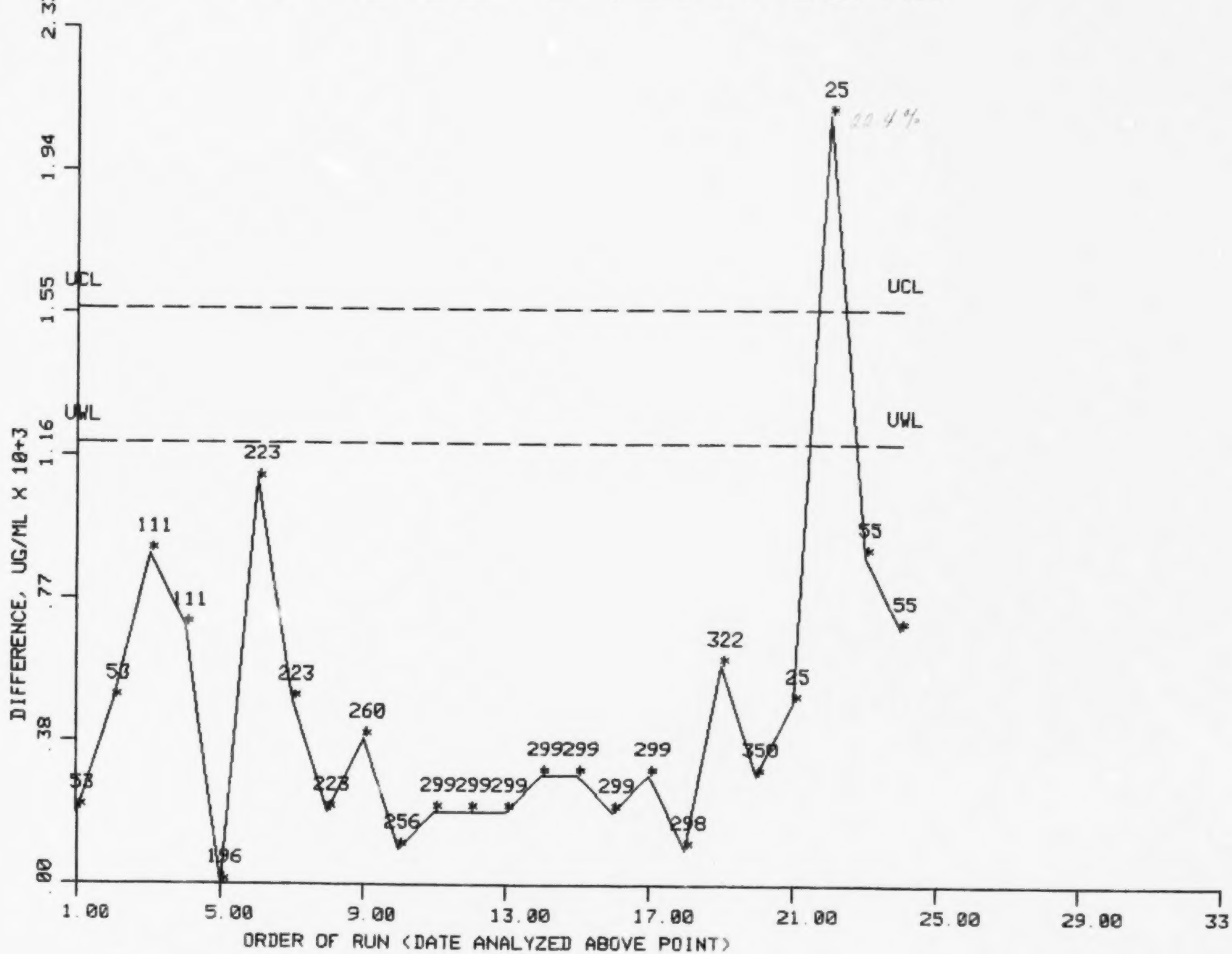
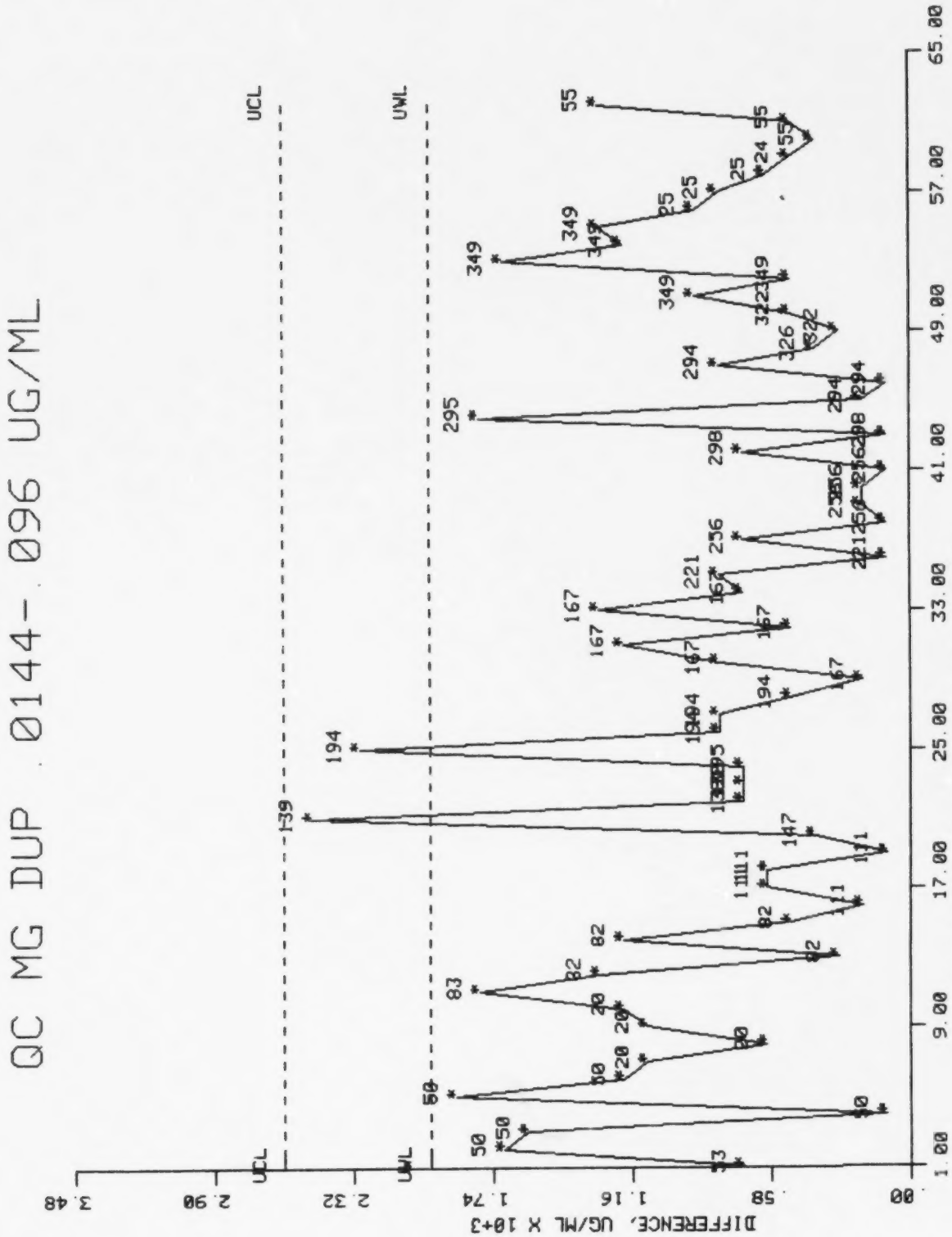
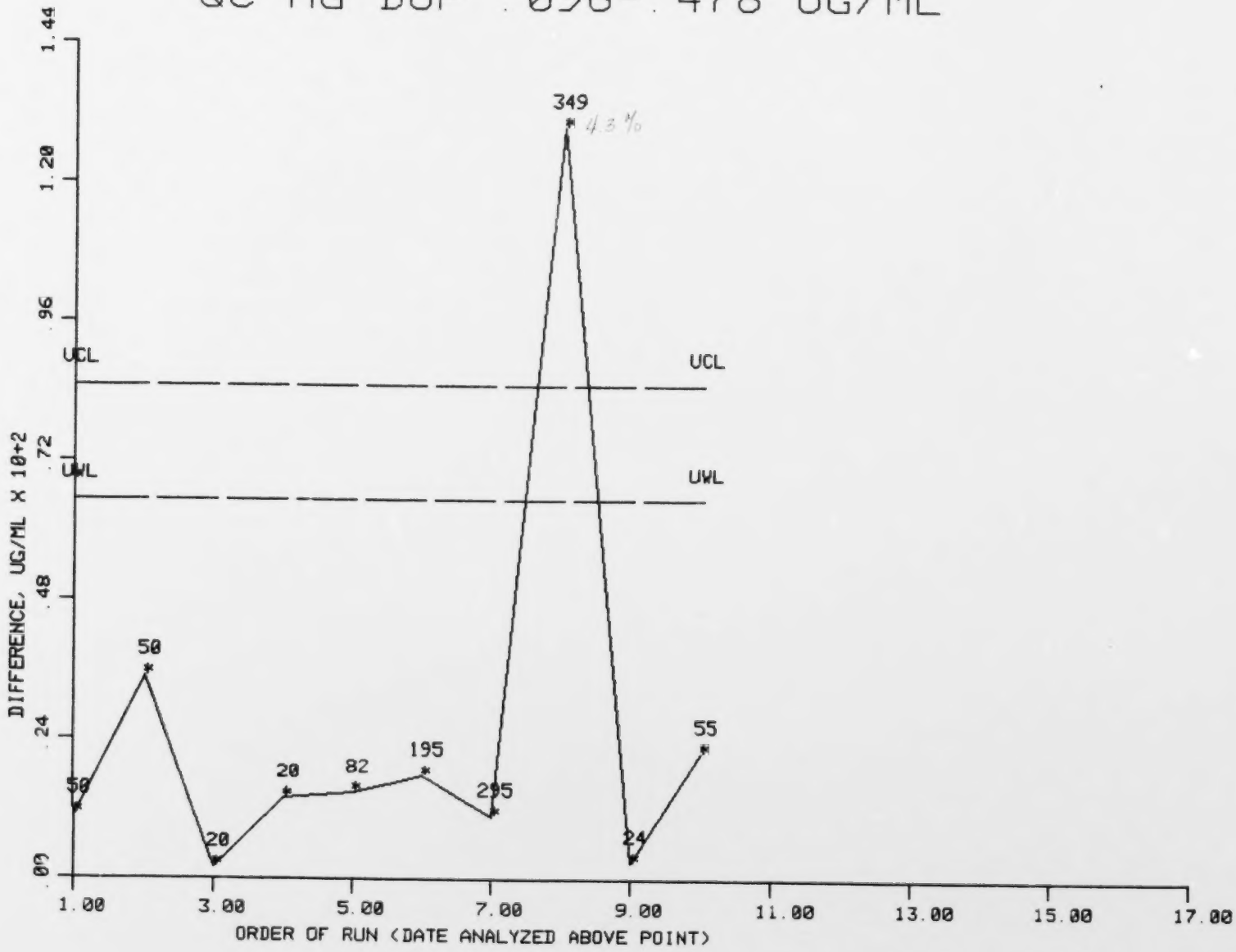
best available copy.

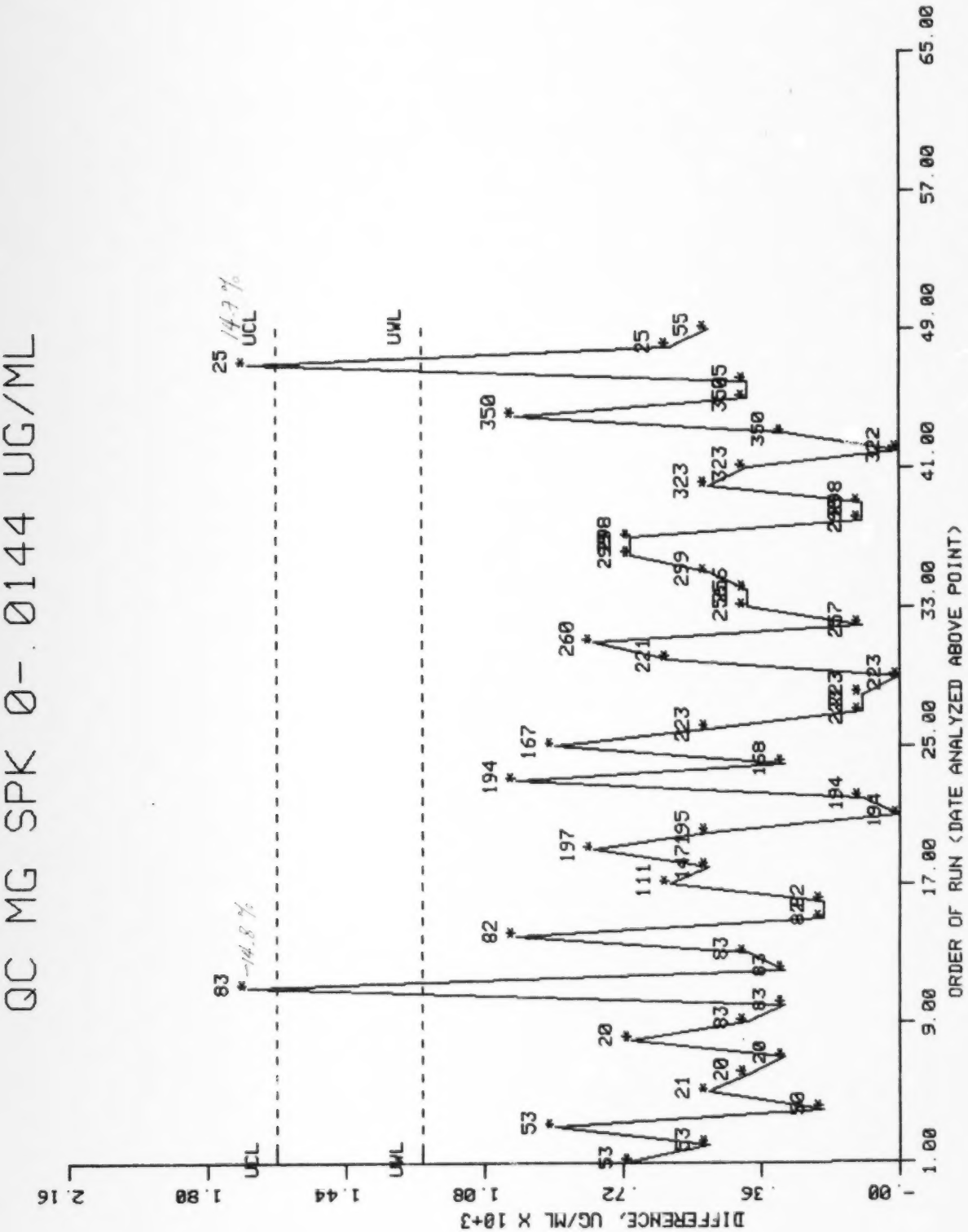
QC MG DUP 0-.0144 UG/ML

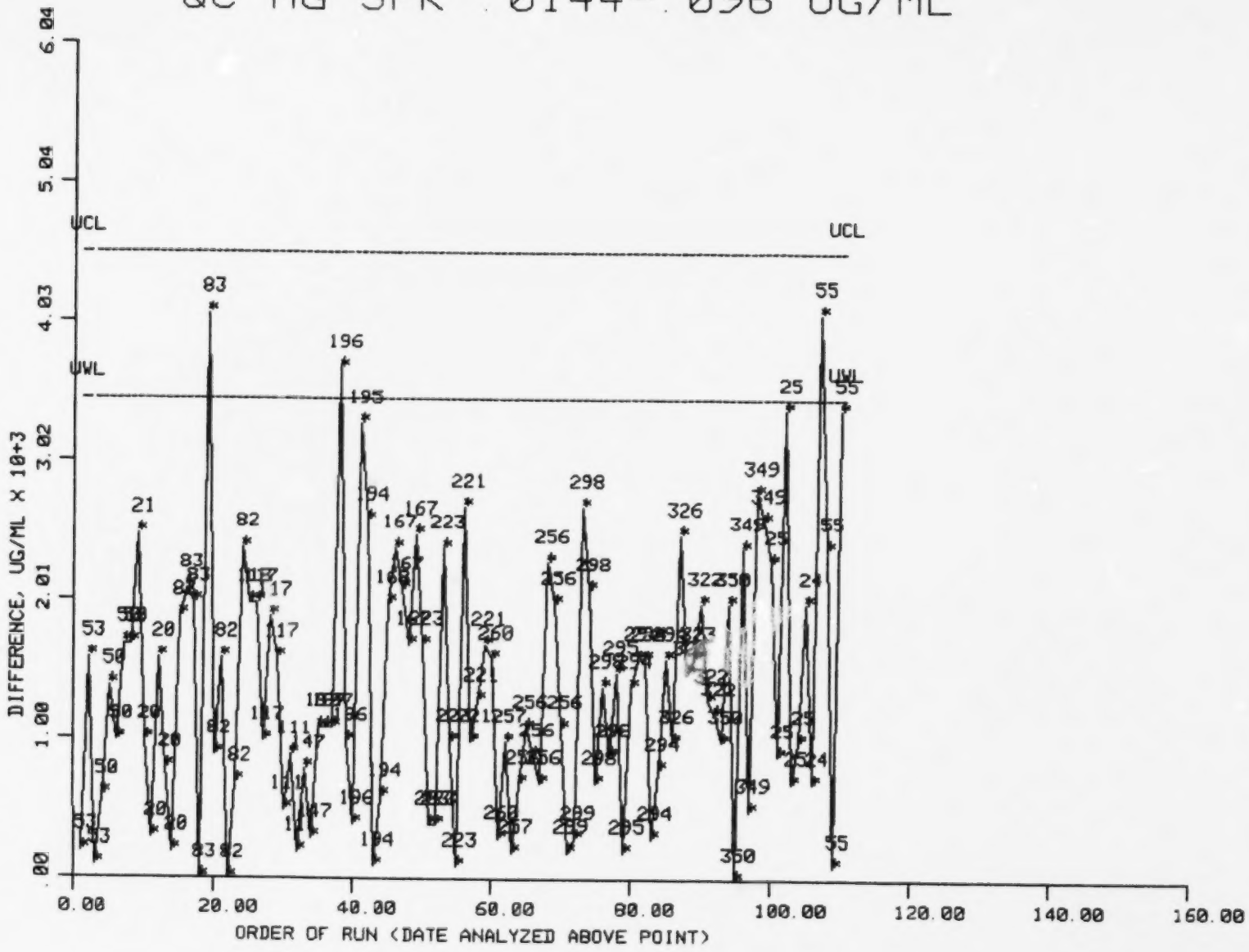


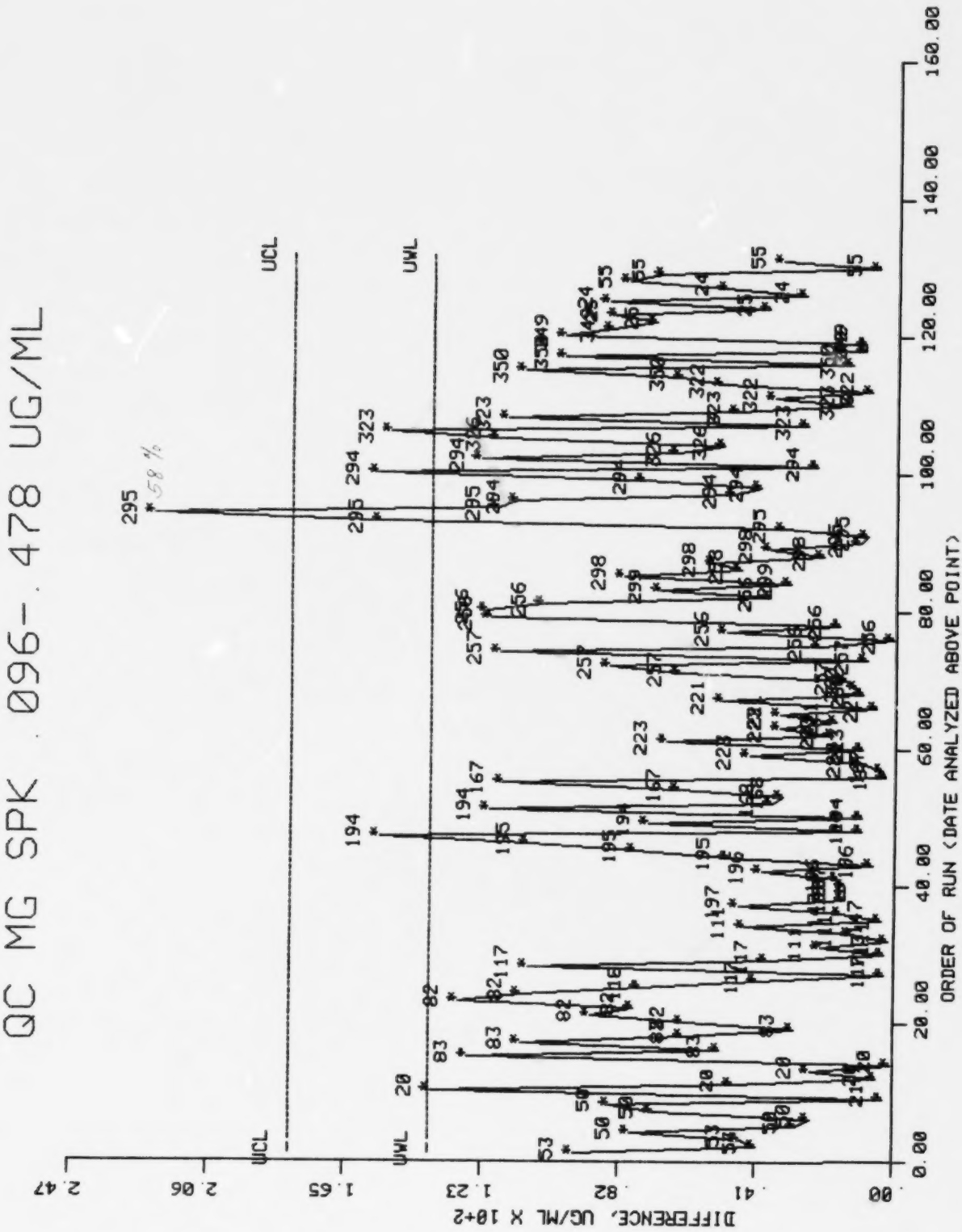

QC MG DUP .0144-.096 UG/ML
UCL
UWL
DIFFERENCE, UG/ML X 10+3
ORDER OF RUN (DATE ANALYZED ABOVE POINT)


QC MG DUP .096-.478 UG/ML
DIFFERENCE, UG/ML X 10+2
1.44
1.20
.96
.72
.48
.24
.00
UCL
UWL
UCL
UWL
349
4.3 %
50
50
20
20
82
195
295
24
55
1.00
3.00
5.00
7.00
9.00
11.00
13.00
15.00
17.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)

A71


QC MG SPK 0-.0144 UG/ML
DIFFERENCE, UG/ML X 10+3
ORDER OF RUN (DATE ANALYZED ABOVE POINT)
UCL
UWL
LCL
LWL
1.00
9.00
17.00
25.00
33.00
41.00
49.00
57.00
65.00
.00
.36
.72
1.08
1.44
1.80
2.16


QC MG SPK .0144-.096 UG/ML
DIFFERENCE, UG/ML X 10+3
6.04
5.04
4.03
3.02
2.01
1.00
.00
UCL
UWL
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)


QC MG SPK .096-.478 UG/ML
58 %
UCL
UWL
UCL
UWL
DIFFERENCE, UG/ML X 10+2
2.47
2.06
1.65
1.23
.82
.41
.00
0.00
20.00
40.00
60.00
80.00
100.00
120.00
140.00
160.00
ORDER OF RUN (DATE ANALYZED ABOVE POINT)